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This 6-week instructional program designed for University of Pittsburgh English-teacher interns emphasizes the development of attitudes and skills necessary for student-oriented teaching. From six core principles of learning, a set of course objectives is derived, and five self-contained units designed to achieve these objectives are presented. The units attempt to guide teachers (1) to identify and explore their attitudes toward students and toward themselves as teachers, (2) to analyze two contrasting styles of teaching and to identify the effects of discussion and teacher questioning patterns upon the roles assumed by teachers and learners in each situation, (3) to increase the amount of student talk in classroom discussions, (4) to increase the number of "high-level" questions they ask while improving the clarity and precision of their question sequences, and (5) to evaluate their own teaching performances and to establish realistic future teaching goals for themselves. (LH)

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AN INSTRUCTIONAL PROGRAM TO ENABLE ENGLISH TEACHERS TO IMPROVE DISCUSSION SKILLS

by
Janet S. Cross

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A. Context and Limitations

It was the findings derived from the Pilot Study which generated the Instructional Program. Therefore, the resulting syllabus is constructed within the framework of time, organization, and personnel limitations of the original Pilot Study. The Instructional Program is designed for a duration of six weeks, with three sixty-to-ninety-minute class meetings per week. The teachers enrolled are liberal arts graduates in English in a fifth-year Master of Arts in Teaching Program. Concurrently, these beginning English teachers are also engaged in an intensive six-week practice teaching experience which provides them with a high school classroom in which to develop and practice skills studied in the Instructional Program. Finally, the revised course includes both formal coursework and individual instruction designed to complement and reinforce the experiences of the formal classroom.

It should be understood that though the Instructional Program was planned within the above framework, it can easily be modified and adapted to fit any of several other organizational patterns:

1. as a longer full-semester or full-quarter English methods course taken before the teacher has been in the classroom for practical teaching experience;
2. as a longer full-semester or full-quarter English methods course taken during the teacher's practical teaching experience with the instructor serving as either the sole supervisor

(common, within an internship situation) or the assisting supervisor (common, within a student teaching situation where the cooperating public school teacher has primary responsibility and daily contact);

3. as a longer full-semester or full-quarter English methods course taken during the teacher's practical classroom experience but without the possibility for concurrent supervision from the instructor of the course; or
4. as a full-semester or full-quarter English methods course taken after the teacher has been in the classroom to teach.

Time, student, instructor and experiential differences may require operational modifications in the syllabus; the basic objectives and thrust of the syllabus, however, can remain constant regardless of the situation.

B. Organization of the Syllabus

Like the Pilot Study, the Instructional Program is organized around learning principles from which objectives and procedures are derived. Techniques for evaluating achievement of those course objectives follow the procedures. The initial section of the syllabus focuses upon six core principles of learning and a set of course objectives which derive from each principle. Two principles are retained from the Pilot Study and four are added. The learning principles are general in nature because they are intended to operate not only for the instructor in planning the learning for the teachers in the course, but also for the teachers in planning the learning for their secondary classrooms. For example, the learning principle which states that "Goal-setting by the learner is an important motivation for learning" points to the following two parallel objectives:

1. The Instructional Program instructor will increase his flexibility first in accepting and then in encouraging a variety of goals designed by his teachers. He will experiment with methods of checking himself against any tendency to direct too forcefully toward his own preferred goals those teachers who are capable of establishing their own goals.
2. These teachers in turn will increase opportunities for individualized student goal-setting and planning based upon the students' needs and abilities. They will not require all students to engage in the same activities and meet the same requirements.

Throughout his teaching of the Instructional Program, the instructor should make clear what learning principles are operating so that the teachers may examine closely these principles and their application to the secondary classroom.

The objectives of the revised Instructional Program differ from those usually established for English methods courses in their emphasis on exploration and development of attitudes and process skills rather than on a learning of content from which attitudes and process skills are assumed to develop. The objectives relate closely to one another. Therefore, their order of presentation does not indicate that objectives A and B, for example, must be reached before C. However, the order indicates that attainment of any one objective may result in greater likelihood of reaching subsequent objectives. Similarly, if the majority of objectives in Segment One are reached, there is greater probability of attaining the objectives in Segment Two because they are specific manifestations of attitudes developed in Segment One.

The course procedures are divided into five segments which are self-contained units. Although the order of these five segments is intended to be chronological, as indicated above, an instructor might have reasons for varying the order. Purposely, the procedures are explicit enough that an instructor can follow them precisely and have the knowledge that another instructor has tested the effectiveness of most of them. Thus the attainment of the objectives becomes less dependent upon chance and more dependent upon previous experimental findings as reported in the Pilot Study.

Each of the five segments is divided into two parts: (1) those procedures which are formal coursework activities for all teachers and (2) those procedures which are individualized activities. The investigator believes that this second part of the Instructional Program is essential to goal achievement, not simply supportive of goal achievement. From the series of recommended individualized activities, the instructor should select those which are appropriate for each specific teacher in reaching the major course objectives. The activities recommended are not inclusive so each instructor is encouraged to devise other more appropriate ones for his particular teachers. Likewise, the instructor will probably not use all suggested activities with all teachers. Although the activities parallel segments chronologically, they may be used at any time during the formal coursework. Timing depends upon each teacher's need and readiness.

Throughout the course description, the investigator's concern is to present enough detail that the reader's possible questions are anticipated and discussed, but to avoid so much detail that the writing is confusing or monotonous. Finally it is hoped that the reader will not judge this course to be too restricting for his use, but instead will proceed creatively and flexibly to modify the recommendations to fit his particular needs for his particular teacher trainees.

C. Syllabus of the Instructional Program

1. Principles of Learning and the Derived Objectives

Learning Principle I

Learning is self-enhancing in process for the learner. Therefore, only when the learner perceives materials and activities as having an important relationship to his interests and values will he make behavioral changes. The objectives for the Instructional Program derived from this Learning Principle state that:

A. Teachers will demonstrate an increased concern for determining their students' motivations, abilities, and needs, by more frequent mention of students' motivations, abilities, and needs in lesson plans and in class and/or supervisory conversations. Concurrently, teachers will demonstrate a decreased concern for their own interests and needs by less frequent mention in lesson plans and in conversations of these interests and needs as the primary basis for planning and teaching.

B. Teachers will recognize the need to establish with students one-to-one relationships that will reveal student interests, abilities, and needs; teachers will therefore (1) plan individual conferences with students either in-class or outside-class; (2) give individualized tasks and assignments based on knowledge of interests, needs, and abilities gained from these conferences with students; and (3) arrange opportunities for meeting, talking, and working with students in contexts other than academic ones.

C. Teachers will become better listeners in their classroom and will evidence (1) an increase in the number of questions initiated in relation or reaction to the ideas expressed by students; (2) an increase in the quantity and quality of direct evaluation made of the ideas expressed by students; and (3) an increase in the facial indications of class attention to student contributions.

Learning Principle II

That learning which is most meaningful requires communication among learners of alternative ideas from which they can make and test choices. Therefore, the learner should be an active participant who develops, expresses, and evaluates his ideas and who listens to and evaluates the ideas of others. The objectives for the Instructional Program derived from this Learning Principle state that:

A. Teachers will increase their skills in observation of student classroom discussion behaviors.

B. Teachers will become increasingly student-oriented in their planning and teaching. They will plan classroom activities that require more student doing and talking and less teacher doing and talking. They will provide classroom atmospheres which stimulate and allow students to develop their ideas fully. And they will learn to use in their classrooms techniques which increase the amount of student talk, one of the most valid indicators of student participation in the learning process.

Learning Principle III

Learning which develops thinking skills is more useful and meaningful than learning which accumulates facts. Therefore, if the learner is to develop conscious skills of learning, he must be fully aware of the logic and sequence of the steps which he follows in that learning. The objectives for the Instructional Program derived from this Learning Principle state that:

A. Teachers will learn to distinguish between representations of student fact-recall thinking and those of high-level thinking.

B. Teachers will recognize that their discriminating use of the fact-recall question and the high-level question controls both the quantity and quality of student thinking. They will then work to ask more high-level questions in classroom discussions.

C. Teachers will participate in the complex process of formulating clear, appropriate questions and substituting them for ambiguous questions.

D. Teachers will determine that their reactions to student responses influence both students' attitudes toward learning and also their thinking experiences. They will, therefore, work to improve their reacting techniques within class discussions.

Learning Principle IV

Repetition under conditions of reinforcement contributes greatly to a learner's acquiring of desired skills and to his overlearning of those skills sufficient to insure retention. The learner should therefore have ample opportunities to practice his skills in a variety of contexts.

The objectives for the Instructional Program derived from this Learning Principle state that:

A. Teachers will be called upon frequently to distinguish between fact-recall and high-level questions in a variety of contexts--the Instructional Program itself, their own classrooms, and the classrooms of other teachers.

B. Teachers will be called upon frequently to write fact-recall and high-level questions for a variety of contexts--the Instructional Program itself, their own classrooms, and the classrooms of other teachers.

C. Teachers will be called upon frequently to observe and test for their effects upon student behavior a large variety of teacher verbal reinforcements.

Learning Principle V

Goal-setting by the learner is an important motivation for learning; evaluation is a continuous process which leads to goal-attainment and further goal-setting. The learner should therefore develop an ability to choose his own goals and evaluate his progress toward them. The objectives for the Instructional Program derived from this Learning Principle state that:

A. Teachers will identify their current patterns of questioning and reacting techniques and will then devise behavioral objectives for eliminating those patterns which are ineffective and strengthening further those which work.

B. Teachers will assume primary responsibility for planning, executing, and evaluating the general classroom operation of their own classes.

1. They will commit themselves to making changes in their teaching behaviors based upon evidence collected and analyzed during the Instructional Program.
2. They will increase their skills in securing student evaluation of learning activity in their own classes and then set for themselves goals for their future teaching consistent with those student evaluations.
3. They will learn to use a supervisor not as the source of all knowledge, but rather as a source of information about their students' learning progress; as a result, they will ask more and better questions during supervisory conferences and will begin to structure the role for the supervisor that will be of most help to them.

C. Teachers will observe a variety of teaching techniques and examine the skills needed for each. Teachers will decide that they want to experiment with certain of these demonstrated teaching techniques.

Learning Principle VI

The most lasting and transferrable learning provides practice in problem-solving. The learner therefore will see his experimentation with posing problem questions as an important first step in problem-solving. The objectives for the Instructional Program derived from this Learning Principle state that:

A. Teachers will recognize as valuable an experimentation with a problem-solving approach to their classroom teaching. They will initiate questions, both in the Instructional Program classes and in conferences, about the methods and learning outcomes of problem-solving teaching, thus demonstrating the attitudes of inquiry and openness both of which are vital to learning the skills of inductive teaching.

B. Teachers will increase the number of problem questions that they pose for students and for themselves.

These six learning principles and their derived objectives are intended to develop teachers who can demonstrate a student-centered style of teaching:

1. This teacher sees the teaching-learning process as an important interaction between teacher and students. He has already observed and thought about students' attitudes toward school, English teachers, and the world around them; he sees these attitudes as key ones to build upon in instructional planning. He possesses skills of observation, but he is not fully aware of the complexities of the observation process.
2. He sees his role as a multiple one which includes the organizing and presenting of subject matter along with other equally important roles. He voices willingness to experiment with various teaching methods.
3. He sees a need to plan for students' development of oral skills in addition to the usual learnings within the content of literature, composition, and grammar and usage. He envisions a broad English curriculum which equips students with the skills they need in the real world outside the classroom. He sees that the thinking processes which students learn and practice are at least as important as the factual knowledge they accumulate.

4. He plans to involve students actively in each lesson through a variety of both physical and mental activities, for he believes that student involvement increases the extent of learning.
5. He sees classroom climate as a function of the various attitudes which students and teacher hold toward each other and toward themselves. Therefore, he sees as important the fostering of one-to-one relationships among the students themselves and between the teacher and student. He does not want all control and decision-making to reside in the teacher, even though classroom order may sometimes suffer as a result.

In contrast, the Instructional Program is intended to discourage the development of teachers who can demonstrate only a teacher-centered style of teaching:

1. This teacher sees the teaching-learning process mostly from his point of view, from his adult world of values and interests. He is not yet in tune with the world of the student and he does not evidence skill in eliciting information from the students which will put him in touch with their world.
2. He sees his role primarily as that of organizing subject matter and presenting it to students. He expects students to regard him as a competent relater of knowledge which is mainly factual in nature and thus indisputable.
3. He sees subject matter primarily as isolated topics of literature, composition, and grammar and usage. He does not usually have sound reasons for teaching certain content other than its existence in the curriculum and in required textbooks.

4. He plans to rely heavily on the lecture method because it is an efficient means of presenting subject matter to students. Of necessity, then, he himself will account for a large percentage of the oral discourse in the classroom. His recitation questions will seek recall of the subject matter knowledge presented to students.
5. He sees classroom management and maintenance of discipline and control as his two primary goals. He expects students to respect him and his directions.

Within the procedures of the Instructional Program reference will be made, particularly in Segment Two, to these two descriptions of teaching styles, a student-centered style and a teacher-centered style. It is hoped that the instructor will refer frequently during the Instructional Program to the specific attitudes and skills described as he attempts to develop teachers who become less teacher-centered and more student-centered.

2. Five Segments of the Instructional Program

Segment One: Approximately One Class Meeting

Controlling Objective

Teachers will identify and explore the attitudes they hold toward students and toward themselves as teachers. Simultaneously, the instructor will examine these same attitudes and determine which will inhibit or facilitate the achievement of the course objectives.

Procedures for Group Classwork

1. During the first class teachers take the Simulation Exercise, constructed specifically for this Instructional Program. They are required to assume their teacher roles and to state reactions and possible solutions

to a series of hypothetical school situations. Teachers take the exercise in-class rather than out-of-class where the uncontrolled conditions might enable them to develop responses influenced by ideas solicited from others. The exercise appears below and is followed by a short instructional note.

Simulation Exercise

Directions: Write your reactions to each question on these sheets. There are no right or wrong answers nor are there some answers which are better or worse than others.

1. One of your students in the third week of class raises his hand and says for all to hear: "This class is always boring--why can't we do something besides discuss for a change?"
   a. Describe the thoughts that go through your mind at that moment.
   b. How could you respond to him at that moment?
   c. List alternatives you would consider for future action.

2. During a composition lesson, you lead a discussion and compare two paragraphs. You have assigned an A- grade to one and a D- grade to the other, but neither the grades nor any evaluative comment is on the two papers. The students compare them on the overhead projector for strengths and weaknesses. You then ask them to assign a grade to each paragraph. The 20-minute discussion does not go as you have anticipated; in fact, the majority of the students assign a better grade to the paragraph you have evaluated as the weaker one. What summary remarks and/or further directions would you probably give to the students?

3. Five less-capable students in your Advanced Standing class come to you after school one night to complain about the amount of homework which is assigned each night. What would you say to them?

4. A student talks with you after school about the semester grade you have given him. He believes that he has earned a B instead of the C. What might you say to him?

5. Your department chairman tells you after his first visit to your classroom that he does not generally approve of the small group organization you have used that day. He asks you to explain your reasons for using small groups instead of the one large group. What are your reasons?

6. Which of the following novels would you choose to teach as the first novel read this year by your eleventh graders? Assume that they all possess the necessary reading level for each novel. List

the reasons for selecting it rather than one of the others. (Indicate which of the novels you are not considering because you have not read them.)

a. Walden
b. The Scarlet Letter
c. The Catcher in the Rye
d. Huckleberry Finn
e. The Red Badge of Courage
f. To Kill a Mockingbird

7. Your principal gives you a choice of sponsorship among the following extra-curricular activities. Assuming that you have the necessary qualifications for handling all of them, which one would you select? (If clarifying descriptions are important to you in substantiating your choice, designate hypothetical details.) What reasoning determined your selection?

   a. ticket-taking at evening basketball games
   b. Student Council sponsorship
   c. American Field Service sponsorship
   d. coaching of an athletic team
   e. sponsorship of a club related to your academic teaching

8. Your supervisor suggests that you plan a two-week unit for your ninth grade "regular" students which involves them in library research and independent study.

   a. What positive learning outcomes might you anticipate?
   b. What problems would you anticipate?

Instructional note: The Simulation Exercise has two primary strengths. First, the situational form of the instrument helps to reveal attitudes and actions the teachers would actually take if they were faced with these situations. In addition, the questions it raises are open-ended in structure and therefore allow for the widest range of possible answers and expression of very different answers by the same person on each measurement. For example, the following responses, or their approximations, to the first situation indicate that the teacher lacks a student-centered orientation:

a. Describe the thoughts that go through your mind at that moment.

—I'll have to talk with him after class and let him know he's not to say such things in class.
—He wouldn't like anything we did.

b. How would you respond to him at the moment?

--I'm sorry, Bill, but you'll just have to suffer through your boredom.
--I'm sorry but I decide what we do in this classroom.

c. List alternatives you would consider for future action.

--Bill would plan and lead a discussion on one of the next few days.
--Bill would write out the answers to discussion questions for homework for one week.

In contrast, these teacher responses indicate a more student-centered orientation:

a. --I'll have to ask Bill after class why he's bored during discussion.
--Maybe we have had too many discussions these three weeks.

b. --I'm sorry you feel that way, Bill. We'll try something different soon. Do you have any ideas?
--Well, let's see why the discussions seem boring to you and perhaps to others.

c. --I'll administer a questionnaire to find out the feelings of the rest of the class.
--I'd let the students help plan some of the next activities.

Although this exercise is recommended for use here in the Instructional Program as an instrument for the instructor to determine the teachers' initial degree of orientation to students, it might also be used effectively as a teaching instrument. For example, teachers might approach the situations by case study techniques. A small-group discussion of alternative solutions to each problem would point out the complexities, rationale, and implications of making certain decisions.

2. Many published teacher-attitude inventories are available for the instructor who wishes to have a more standard comparison between teacher attitudes at the beginning and close of the Instructional Program. Standardized tests and inventories are particularly desirable if a correlation between change in teacher attitude and growth in specific

verbal behaviors is to be made with controls. The instructor wishing to investigate any of these tests is directed to the Gage Handbook of Research on Teaching, Chapter II, "The Teacher's Personality and Characteristics," for the bibliography which reports research already done with these instruments. One of these in particular, The Minnesota Teacher Attitude Inventory (The MTAI), is suggested for use because of its reported ability to measure attitudes that are indicative of teacher-centered and student-centered personality dimensions, helpful information for the instructor of this Instructional Program. Its Manual published in 1951 states:

> Investigations carried on by the authors over the past ten years indicate that the attitudes of teachers toward children and school work can be measured with high reliability, and that they are significantly correlated with the teacher-pupil relations found in the teachers' classrooms. The Minnesota Teacher Attitude Inventory has emerged from these researches. It is designed to measure those attitudes of a teacher which predict how well he will get along with pupils in interpersonal relationships... (Cook, Leeds, & Callis, 1951, p. 3).[1]

And subsequent investigations and uses of the instrument attest to its ability to establish relationships between the teacher attitudes it measures and the teacher-pupil relations demonstrated in the classroom. Other appropriate attitude inventories may be available or may be developed by the instructor.

Procedures for Individualized Instruction

The instructor holds a conference with each teacher to explore in more detail the goals he holds for himself and for his students and to probe for his rationale for these goals. Sample conference questions follow:

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[1] J. W. Getzels and P. W. Jackson, "The Teacher's Personality and Characteristics," Handbook of Research on Teaching, ed. N. L. Gage (Chicago: Rand McNally and Company, 1963), p. 508.

1. What goals do you hold for yourself as a teacher? Why do you have these goals?

2. Which of your personality characteristics will facilitate your progress toward these goals?

3. Which of your personality characteristics may inhibit your progress toward these goals?

4. What long-range objectives are you establishing for your students? Do these include both content and process objectives? What sorts of teaching behaviors will likely encourage attainment of these objectives? What sorts of teaching behaviors will probably discourage attainment of these objectives?

5. What attitudes toward learning in general do you expect your students now have? toward English? toward English teachers? Why might they hold these attitudes? Can a teacher change student attitudes? If so, how would you go about changing one of the attitudes you have just described?

6. For specific illustrations, let's look at some of your reactions to the hypothetical situations in the Simulation Exercise. For instance, in situation six, if the teacher had chosen The Scarlet Letter because of "its introductory value to a chronological approach in an American literature survey," the instructor might ask these questions: Why should students study literature chronologically? What risks are you taking in beginning the year with readings in which characters and settings are generations removed from your students? What other selections might be more consistent with your previously-mentioned goals of encouraging students to relate literature to the questions about people and living which they are facing every day?

Evaluation

To measure each teacher's ability to identify his attitudes toward students and toward himself as a teacher, the instructor evaluates carefully the content of each teacher's comments in the individual conferences. If the teacher is unable to specify his goals as a teacher (suggested question 1) or is unable to identify personality traits which will inhibit or facilitate his attainment of those goals (suggested questions 2 and 3), the instructor can probably conclude that he has failed to achieve his first objective for Segment One.

To measure his attainment of the second part of the objective for Segment One, the instructor should attempt to list for each teacher those attitudes expressed in reaction to the Simulation Exercise which will either inhibit or facilitate attainment of the course's objectives. In addition, he should be able to use the operational descriptions (pp. 116-18) and draw some tentative conclusions about each teacher's tendencies to be either teacher-centered or student-centered. If the instructor cannot list specific teacher attitudes or cannot draw tentative conclusions, he probably has not yet achieved this second part of the objective for Segment One.

Segment Two: Approximately Three Class Meetings

Controlling Objective

Teachers will be exposed to two contrasting styles of teaching and will identify the effects of teacher/student talk and teacher questioning patterns upon the roles assumed by teachers and learners in both discussions.

Secondary Objectives

A. Teachers will become so actively involved in student learning roles during discussions that they can begin to see learning and ultimately their own teaching from a student's point of view.

B. Teachers will extend their expectations of the teacher's role to include one in which the teacher (1) listens more than he talks and (2) frames questions that will elicit increased student talk and encourage higher levels of thinking.

C. Teachers will demonstrate willingness to examine techniques to increase student involvement and participation in the learning process.

Procedures for Group Classwork

As a general introduction, the instructor asks teachers to participate in the subsequent discussions as English teachers talking among themselves; they are not to assume roles of high school students. The instructor does not identify his purposes for the next two class sessions.

1. Prior to this class, the instructor has assigned Shirley Jackson's "The Lottery" for outside reading. "The Lottery" is a good choice because of its previously-demonstrated interest for both English teachers and students and particularly because of its many possibilities for discussion on both factual and interpretive levels. In the class, the instructor leads a 25 or 30-minute discussion and demonstrates a student-centered teaching style, labeled Style I, as consistently as he is able. He follows an adaptation of this lesson plan.

"The Lottery": Style I

Objective

Participants will search for motives behind the behaviors of various characters in the story and will make approximations of the following statements:

A. Mob persuasion is a powerful influence on man's behavior;
B. Traditions are often cruel and barbaric, yet they are carried out without question of their rationality or usefulness; and
C. Civilized man often uses a scapegoat to pardon his own shortcomings.

Procedures

The instructor asks questions like the following sample ones:

1. What words would you use to describe the townspeople and their daily activity throughout the year?
2. What evidence and detail from the story led you to these descriptions?
3. What words would you use to describe the lottery and the subsequent stoning of one villager?
4. Why then is it ironic that these townspeople should hold a lottery?
5. Let's look at the attitudes of the townspeople to see if we can find a reason for their strange behavior:
    a. Who says: "It isn't fair; it isn't right"?
    b. What is "it"?
    c. Why does she think it is not "fair"? not "right"?

   d. What are the differences between "fair" and "right"?
   e. Are there any townspeople who voice sympathy for Tessie's plea?
   f. Why do they then think that it is fair?

6. What other reasons can you cite for their continuation of the lottery?
7. What basic human needs or desires does the perpetuation of the lottery serve?
8. What traditions have you observed that are carried on today without question of their validity or usefulness?
9. In many of her writings, Miss Jackson asserts that there is evil in everybody. Does this statement apply to the townspeople? If so, what causes this evil to take hold of them all at the same time of year?
10. What reasons can you suggest for the participation of "typical, ordinary Americans" in recent anti-Negro riots, for example? How might their behaviors be prevented?

Evaluation (if desired)

To measure the participants' attainment of the objective, the instructor asks the participants to list on paper the motives they would ascribe to the townspeople's behaviors. If their responses approximate those stated in the objective, they have achieved the objective.

Instructional note: Throughout his teaching within Style I, the instructor has the following objectives which go beyond the specific lesson plan objectives:

A. To ask as many questions as possible that elicit fully-developed interpretive responses from the participants;

B. To trigger interaction among the participants and to withdraw himself from the discussion whenever he is not needed as a catalyst to stimulate such interaction; and

C. To listen carefully to the comments made and then to ask questions which encourage participants to evaluate or clarify their own and others' responses.

2. Immediately following the first discussion, in a second 25 or 30-minute discussion of "The Lottery" the instructor demonstrates a more teacher-centered teaching style, labeled Style II, as consistently as he is able. He follows an adaptation of this lesson plan.

"The Lottery": Style II

Objective

Participants will demonstrate their factual knowledge of the setting, plot, and characters in "The Lottery."

Procedures

The instructor asks questions like the following sample ones:

1. Where does this story take place?
2. What is the time of year?
3. What is the population of the village?
4. What is the mood in the village when the story first opens?
5. When do you notice that this mood is changing?
6. What one word best describes this new mood which settles over the village?
7. For how long have the townspeople held a lottery?
8. How did it originate?
9. Who conducts the lottery?
10. What is his attitude toward this job?
11. Name at least three of his traditional duties in conducting the lottery.
12. Name at least three parts of the original lottery ritual which have been abandoned.
13. Who was the last villager to arrive at the drawing?
14. Why was she late?
15. Why does Old Man Warner say that the village shouldn't give up the lottery as the village to the north is talking of doing?
16. How long has he been in the lottery?
17. Who draws the paper with the black spot on it?
18. What is his wife's immediate reaction?
19. What do Mrs. Delacroix and Mrs. Graves reply to Tessie?
20. What does her husband reply?
21. How many children do Bill and Tessie have?
22. Why is one of these children not a part of the final drawing?
23. What is the reaction of each of the following people when they learn that Tessie has the black spot: Mrs. Delacroix? the children? Old Man Warner?
24. What is Tessie's final scream?

Evaluation (if desired)

To measure the participants' degree and accuracy of factual knowledge, the instructor gives a quiz which tests recall of selected factual items.

Instructional note: Throughout his teaching within Style II, the instructor has the following objectives which operate to build a sharp contrast between the two discussions:

A. To conduct a recitation which elicits from the participants short-answer recall of the important factual material--plot, setting, characterizations, and purpose of the story;

B. To control the recitation tightly enough that he can avoid deviating from the specific order of questions dictated by his lesson plan; and

C. To judge for himself whether the answers of the participants are right or wrong.

3. Following their participation in the pair of discussions, the teachers describe their reactions to the styles of teaching demonstrated and to their roles as participants in each discussion. They respond in writing to the following questions:

   A. Which of the two discussions did you enjoy more? List your reasons.

   B. List what you learned in the first discussion;
   List what you learned in the second discussion;
   What are the differences in these learnings?

4. The teachers first share their written reactions to the first pair of discussions. To solidify learnings, the instructor then repeats the sequence described in Procedures 1-3, this time with new content, and again teachers participate in and react to the two discussions. Instructional note: Again, the instructor's major objective is to create for the teachers a contrast between two styles of teaching. He should not select subject matter that in itself is so controversial or difficult that the intended impact of the contrasting teaching styles is minimized. However, the material should be exciting enough that discussion can be active. In addition, he should select material

which explores the scope of the English curriculum. For instance, the second pair of lessons should involve content other than the short story genre. Depending upon the immediate needs of the teachers for their classroom and upon their abilities as a group, the content might focus upon a single point of grammar or usage, a short piece of literature (poem or essay, particularly), or an analysis of a writing sample. A key to success within this segment of instruction is the ability and willingness of the instructor to teach well within both styles, thus providing segments of teaching which present clear and skillfully-executed contrasts. The instructor who knows from past performance that he will be unable to shift successfully from one teaching style to the other may find it wise to ask another instructor to teach one of the lessons in each pair or may wish to use a videotape or movie.

5. The instructor leads an inductive discussion that encourages contrasts between the first lessons in the pairs and the second lessons in the pairs. He maintains the role of a question-framer who encourages the teachers to draw comparisons and contrasts and to ask questions. In addition to the questions suggested above in Procedure 3, the instructor asks these questions:

    A. What actual activities did you yourself engage in during the first lesson of each pair? During the second lesson of each pair?

    B. In which lesson of each pair did the instructor talk more? What was the nature of the instructor's talk? And what was the nature of the participants' talk?

    C. In the other lesson of each pair what was the nature of the instructor's talk? And what was the nature of the participants' talk?

    D. What seemed to be the one most important concern of the instructor during the first lesson of each pair? Would you consider this concern the most important one for the instructor to hold? If not, what other concerns might he have had? Did he shift his concern during the second lesson?

E. If not answered in the preceding discussion of question D, what major content aims did the instructor have in the first lesson of each pair that seemed less important or non-existent in the second lesson of each pair? In contrast, what major content aims did he have in the second lesson of each pair that seemed less important or non-existent in the first lesson?

6. Referring to the descriptions of a student-centered teacher and a teacher-centered teacher (pp. 116-18), the instructor introduces the next segment of the Instructional Program in this approximate manner:

> In the previous pairs of discussions, we have observed two styles of teaching and noted their contrasting characteristics in the balance of teacher/student activity and involvement in learning. In Style I the teacher talks less than the student, asks a majority of questions which solicit fully-developed answers, and is generally student-centered. In Style II the teacher talks more than the students, asks a majority of questions which solicit short, factual answers, and is generally content-centered. These two styles can both be appropriate ways of teaching, but must be closely related to the teacher's objectives and materials. In the remaining weeks of the Instructional Program, however, we shall concentrate on attaining the skills which a teacher needs to teach effectively within Style I. Because most beginning teachers have been exposed to only a few teachers who are student-centered, they usually tend to be more content-centered in their own teaching. First, we will look at ways in which the teacher can increase the amount of student talk in a classroom discussion. This increase in student talk is not the end objective, however; it is one means to our most important goal of increasing both the amount and quality of student thinking. When the students are exposing their thinking through their oral discussion, the teacher is then able to evaluate that thinking and help students to find ways of improving their thinking skills.

Procedures for Individualized Instruction

1. The instructor arranges with each teacher to tape a 15-minute discussion about a short story selected by the teacher and instructor for its appropriateness in reading level and interest for his particular high school students. The tape should be made no earlier than the fourth day the students meet to allow them to become accustomed to the teacher, to each other, and to classroom procedures. It might

be wise for the teacher to place the recorder in his classroom on the day preceding the taping so that both he and his students will become accustomed to its presence. The tape should be made no later than the sixth day the students meet, however, because the teaching should be a representation of the discussion style of the beginning teacher. It is doubtful that the teachers would be influenced by the procedures of the Instructional Program by the sixth day of summer school.

2. Sometime during the first week of summer school, each teacher observes three other English classes and is asked to do the following:

> Assume the role of a student in all three classes. List on paper (a) each activity that you as a student are involved in during the class and (b) the feelings and attitudes that you have toward the teacher during the class.

Teachers have already observed in the discussion pairs (Procedures 1-4) for (a) relationships between their own participation as learners and the extent of their enjoyment and learnings during the discussion; and (b) specific behaviors of the instructor which influenced their attitudes about the class. Now, in this exercise, teachers are asked to examine the effects on students of these same two variables, learner participation and specific teacher behaviors. This time, however, the teacher is not participating in the discussion as a learner but is observing both teacher and students in the three different classes. Using again the criteria for student-centered and teacher-centered teaching, he tries the more difficult task of describing as an objective observer the degree of student involvement and the attitudes students probably hold of their teacher.

3. As soon as possible after each teacher has observed the three classes, the instructor holds a conference with him to discuss his observations.

The instructor's major purpose in this conference is to effect the following learnings: (a) teachers will increase their skill in identifying those behaviors which contribute to a student-centered classroom atmosphere; (b) teachers will conclude that students probably see things in the classroom differently than does the teacher; and (c) teachers will suggest that a relationship probably exists between a high amount of student participation and student enjoyment of the class.

Evaluation

To measure teachers' achievement of the controlling and secondary objectives of Segment Two, the instructor considers both what teachers are able to verbalize in their group classwork and individualized instruction and what they are able to implement in their teaching. Using several sources of written and oral data, the instructor determines (1) how able each teacher is to describe discussions in terms of teacher/student talk and teacher questioning patterns, (2) how able he is to relate these discussion characteristics to the roles assumed by teachers and learners in any discussion, (3) how frequently his comments evidence a student's view of learning, and (4) how enthusiastically he examines techniques which will increase student involvement and participation in the learning process. Included in these sources of data are (1) each teacher's in-class written responses to the questions asked after each pair of demonstration discussions, (2) his in-class oral responses in the final discussion about the contrasts between the two teaching styles, and (3) his analysis with the instructor of observations made in three high school classes. Comparing data drawn from each teacher's initial tape (Segment Two, Individualized Instruction) with data drawn from current classroom observations, the instructor determines the degree to which each teacher has (1) increased the amount of time during discussions when he listens to students' responses and (2) framed more questions that elicit increased student talk and encourage more student involvement and participation in the learning process.

Segment Three: Approximately Five Class Sessions

Controlling Objective

Teachers will increase the amount of student talk in their classroom discussion, one of the prime indicators of student involvement in the learning process.

Secondary Objectives

Teachers will practice the following five skills as a means of increasing student talk:

A. decreasing the amount of teacher talk;
B. decreasing the total number of teacher questions;
C. identifying and decreasing the number of controlling questions, such as the "yes-no" question and the cue question;
D. increasing feedback of a qualifying nature; and
E. increasing student/student interaction.

Procedures for Group Classwork

Instructional note: Incorporating a great variety of activities in each Instructional Program session, the instructor works to present classroom models of continuous student activity and involvement. Therefore, the sequence of activities in Segment Three is characterized by frequent change from one activity to another and maximum opportunity for physical and mental involvement by as large a number of teachers as possible.

1. The instructor introduces Segment Three by informing the teachers that they will be studying various techniques by which a teacher can

increase the amount of student talk in class discussions. Again the instructor emphasizes the relationship between an increase in student talk and the increased opportunities then available for the teacher to examine the student thinking that is represented by that talk. He encourages teachers to realize that one obvious way to increase opportunities for students to talk is for the teacher to decrease his own talk. By becoming more sensitive to the balance of teacher/student talk, the teacher may find instances when he can either reduce or avoid completely explanations that the students are just as capable of making. However, this decrease in teacher talk is not absolute assurance that pupils will talk more; perhaps more silence will be the outcome of less teacher talk. Therefore, the teacher needs to find other more controlling ways of increasing student talk.

2. The instructor chooses a 10-minute segment from each of the two "Lottery" tapes, one characterized by a large number of teacher questions, the other by a relatively small number of teacher questions. Teachers listen to both segments and then respond on paper to the following:

   A. Estimate the number of questions which the teacher asked in the first discussion segment.

   B. Estimate the number of questions which the teacher asked in the second discussion segment.

   C. As we did in our analysis of the demonstration lessons (in Segment Two), characterize the kind of student talk which occurred in each of these two lessons.

   D. What, if any, connection is there between the number of teacher questions and the kind and amount of student talk in any lesson?

3. The instructor first deals with the teacher responses to questions A and B. He provides his tallies of the number of questions in each segment and teachers compare their estimates with the actual count

and suggest reasons for any sizeable discrepancies in their estimates. They also offer explanations for the differences in the numbers of teacher questions as related to the instructor's stated goals for each lesson. Then the instructor deals with the teacher responses to questions C and D and continues the discussion until teachers verbalize the following key generalization: because a discussion characterized by many teacher questions seldom includes fully-developed student answers, one way the teacher can increase the amount of student talk in a discussion is to reduce the total number of questions he asks. Assignment evolving from the discussion: In preparation for the next session, the instructor makes this assignment:

> Examine the questions on the two mimeographed lesson plans which the instructor used for the discussions of "The Lottery" and make two lists. Include in one list controlling questions, those questions which give students little choice in the way they respond and therefore encourage one particular answer. Include in the second list open-ended questions, those questions which give students a wider choice in the way they can respond and therefore encourage more divergent answers from more students. Each lesson plan contains both kinds of questions.

4. In class, the teachers listen to the first ten minutes of both of the taped "Lottery" discussions whose lesson plan questions they have categorized as an outside assignment. As they listen to the amount of student talk elicited by each question, they determine whether the question can be characterized as controlling or open-ended and they check their written categorizations of those same questions made the night before.

5. The teachers form generalizations about differences in the students' responses to each kind of question. The instructor anticipates approximations of the following contrasts:

> The student response to a controlling question is usually (a) only a few words or phrases, (b) prescribed rather tightly

in meaning by the question, (c) seldom challenged by another student, and (d) followed immediately by another question requesting clarification.

The student response to an open-ended question is usually (a) a full sentence(s), (b) creative, original in meaning, (c) only one of several possible responses, and (d) followed by another response.

6. To gain skill in recognizing and revising two specific types of controlling questions, teachers study the "yes-no" question and the cue question. They examine questions composed or selected by the instructor which request the student to answer "yes" or "no" but not to provide the rationale for his choice. Individually, they then reword, on paper, these "yes-no" questions into forms that encourage more than the one-word response from students, and as a group they compare their revised questions for strengths and weaknesses. For instance, one sample question might have been "Do the townspeople enjoy the lottery?" and through individual work and group discussion its revision might have been "What attitudes do the townspeople have toward their lottery?" Teachers then examine cue questions composed or selected by the instructor which hint strongly at the desired response through the wording of the question. Individually, they then reword on paper these cue questions into forms that allow more than one particular response, and as a group they compare their revised questions for strengths and weaknesses. For instance, one sample question might have been "Why shouldn't the townspeople continue such a barbaric and useless tradition as the lottery?" and through individual work and group discussion its revision might have been "What reasons would you use to persuade the townspeople to discontinue the lottery?"

7. The instructor selects for a 10-minute monologue some controversial educational issue, like "What responsibility does the teacher have toward those students who don't want to learn?" or "Should there be a theme-a-week requirement in the high school English classroom?" Both the monologue and succeeding "discussion" should be taped. Without any introduction to his purposes, he voices a series of opinions intended to disturb a majority of the teachers and incite them to expression of disapproval. He continues his monologue until he senses teacher antagonism and readiness to disagree. At this point, he opens the class to questions and conducts a discussion with these goals:

   A. To call more frequently on those teachers who usually have little to say (designated for this activity as "A" Teachers) than on those teachers who usually are bursting with enthusiasm to express their ideas ("B" Teachers);

   B. To agree with and praise those ideas expressed by the "A" Teachers and to cut-off, disagree with, or virtually ignore those ideas expressed by the "B" Teachers;

   C. To engage the "A" Teachers in further examination of their ideas and to let die undeveloped the ideas expressed by the "B" Teachers; and

   D. To summarize, using only those ideas advanced by the "A" Teachers.

8. At the conclusion of the discussion, all teachers respond in written form to these questions:

   A. Did you enjoy the lesson? List specific reasons for your answer.

   B. How would you have handled the discussion differently had you been the discussion leader?

Since teachers may hesitate to criticize him, the instructor may wish to admit that he has experimented with certain approaches in this discussion and that teachers should feel free to criticize and/or speak positively of his actions.

Instructional note: (a) As indicated earlier, the instructor should select a topic about which his particular group of teachers is likely to have strong opinions because of its relevance to their daily teaching problems. The topic should develop in them more awareness of general education or English-education issues which they will need to understand and interpret to parents, administrators, and the general community. Other possible topics for the monologue and "discussion" might include:

1. Should teachers strike? Would you strike?
2. Which grammar should students learn: traditional grammar or "new grammar"?
3. Should students be allowed to select freely their outside-reading books (The Catcher in the Rye, etc.) or should they be required to select only books which the teacher judges appropriate for them?

(b) The instructor follows the outlined strategy for treating the contributions of the "A" and "B" Teachers because he wishes to produce specific effects on the participants' attitudes toward the discussion. For example, as a group teachers hopefully will realize that their own students probably are quick to recognize and to resent such preferential treatment as they themselves have just received. And individually a teacher who tends to monopolize the classroom with his own monologue may realize that many students resent this talk because they can't ask questions or express their own ideas. If the instructor has already identified those teachers who have characteristics of the teacher-centered teacher who allows his students little opportunity to talk during discussions, he may wish to include them in the group of "B" Teachers so that they may feel the effects of being relatively ignored in a class discussion.

9. At the next class, the reactions of the participants to their part in the "discussion" are compared. Explanations are sought for the differences in each teacher's enjoyment of the discussion. The instructor can replay previously-marked segments of the taped discussion to substantiate or negate proposed explanations. For example, if teachers follow along on a selected tape segment the difference in treatment given by the instructor to two designated teachers for five or ten minutes, they may discover reasons for these two teachers' differing opinions about enjoyment of the discussion. If teachers readily point to the influence of the teacher's reaction pattern in sustaining a learner's interest in discussion participation, they should then study specific instructor reactions and (a) describe the probable impact on the learner of a particular instructor reaction; (b) suggest several alternative reactions and the advantages of each; (c) describe the impact these alternative reactions might have had in the same situation; and (d) indicate the directions that the discussion might have gone following each alternative reaction.

10. The instructor selects a film of a high school classroom discussion which (a) focuses on a major problem question that students are trying to solve, (b) stimulates segments of spirited student/student interaction, and (c) contains a variety of teacher reaction patterns. ("A Way of Learning," produced by the New York University Linguistics Demonstration Center, fits this description well.) Then the instructor introduces the film:

> In our earlier analysis of the differences between the two demonstration discussions of "The Lottery," you noted that the more open-ended questions frequently produced two or three different student answers without an intervening teacher reaction or question, thus increasing the amount of student talk and potential student interaction. In the following film frequent interactions of this kind occur among students. While you watch the film, look for and write down the techniques which this Master-teacher uses to encourage and maintain student/student interaction. Include specific illustrations.

After they view the film, teachers present their findings which may approximate these statements:

A. The Master-teacher built the discussion around one clearly-stated major question and kept students focused on that question rather than allowed them to raise unrelated questions.

B. He frequently requested that students evaluate other students' answers.

C. He frequently asked one question which sought various examples from different students to illustrate a particular point.

D. And he called on various students for further treatment of a question already answered by one student.

11. The teachers then view part of the film a second time to observe for the specific techniques identified in the preceding discussion. In addition, they list those teacher questions which produce an exchange among three or more students before the teacher asks another question. The instructor may wish to provide a worksheet which indicates the specific items the teachers are to observe for and list.

12. After they view this segment of the film, teachers characterize the questions they identified as eliciting three or more student responses before the teacher intervened. The instructor then presents from this same segment three or four questions that did not elicit student/student interaction, and teachers try to reconstruct these questions to meet the description of the questions which did elicit student/student interaction.

Assignment evolving from Procedures 10, 11, and 12:

A. Plan a 15-minute discussion for your morning class in which students focus on one major problem question, such as "Why did Richard Cory kill himself?"

B. Write the sequence of related discussion questions that you will ask to help students solve the problem question.

C. Tape the discussion and then examine the tape with the instructor for evidence of student problem-solving behaviors such as the sharing of relevant information and then the building and testing of possible solutions.

13. The teachers again observe a segment of the film and list those teacher reactions which produce further student discussion on the same question. The instructor asks the following questions:

A. What teacher reactions triggered a further comment or question from either the same student or a different student before a new teacher question was introduced?

B. What are the characteristics of these reactions which make them different from other teacher reactions that do not elicit another student response?

14. The instructor first selects two taped English discussion segments, one of which contains teacher reactions that are few in number and usually discouraging or indifferent in tone, and one of which contains teacher reactions that are more frequent in number and usually encouraging in tone. He then makes typescripts of these two discussion segments and asks teachers to examine them in the following way:

A. Jot down on Typescript One in the space provided below each teacher reaction the characteristics of that particular reaction.

B. Follow the same procedure on Typescript Two.

C. Then write a paragraph in which you contrast the probable effects on student attitudes and learning of the reactions of Typescript One and Typescript Two.

As a group teachers describe and discuss their findings in steps A, B, and C. When they hypothesize that students who are seldom rewarded are less likely to continue participating than those who are frequently encouraged, they are ready to suggest ways in which the discouraging teacher reactions of Typescript One might be changed to resemble more closely the encouraging teacher reactions of Typescript Two. Instructional note: If the instructor cannot easily produce typescripts from his teachers' discussions, he might search for appropriate segments in printed transcriptions which occasionally appear in film descriptions or in research publications that involve classroom discourse analysis. For example, Romiett Stevens includes two transcripts of English high school discussions in her report *The Question As a Measure of Efficiency in Instruction*. Basically the two discussions are both fact-recall recitations (see Pilot Study, Learning Principle I, Procedure 3 for more descriptive details). However, the teachers do differ in their reacting patterns: the teacher of the Cooper discussion provides varied reactions--some positive, some negative, and some qualifying, while the teacher of the Scott discussion provides no reactions and moves directly to another question, leaving the students to guess from the content of the next question whether the previous answer was the one the teacher desired.

15. As an introduction to Segment Four, the instructor makes the following statements:

> Finding ways to increase the amount of student talk obviously does not insure that this student talk will represent an increased quality of student thinking, the teacher's ultimate objective. However, when more students reveal their thinking skills in an oral discussion, the teacher is in a better position to help them increase the variety and level of these thinking skills. Therefore, at the same time that we are experimenting with techniques for increasing the amount of student talk in discussions, let us find ways for increasing the quality of the thinking represented by that talk.

As you have observed in the pairs of demonstration lessons at the beginning of the Instructional Program, one lesson in each pair required of students more a creative manipulation of the facts of the story than a mere recall of facts. And the key to each type of thinking was the kind of question which the instructor asked. The question is any instructor's single most effective means for controlling the level of students' thinking. Therefore, in the next segment of this course, we shall be examining the question as a controlling agent for students' thinking.

Assignment:

Read the Edward J. Gordon article titled "Levels of Teaching and Testing." Test your comprehension of the distinctions among the five question levels by searching for examples of each type in one of your recent question sequences on a lesson plan. Note which levels, if any, are not included in the sequence. Instructional note: The Gordon article appears in Burton and Simmons' *Teaching English in Today's High Schools*, which is available in paperback. If the instructor does not require the teachers to purchase the text, he may duplicate the article and distribute to teachers for reading and later in-class reference. The section from the article which appears at the end of this segment is included to introduce the instructor to the five levels; it is advised, however, that the teachers read the entire article rather than this portion.

Procedures for Individualized Instruction

With the instructor, the teacher listens to his initial tape (or a more recent one) and identifies the number of questions he asked in the first ten minutes of the discussion. If the number is excessive--for example, twelve or more--the teacher then examines the characteristics of the questions in terms of the responses students make to them. (See Procedures for Group Classwork, 3 and 4.) If the questions usually bring only one-or-two-word answers rather than longer, fully-developed answers, the teacher can begin to plan open-ended questions that encourage more student talk than do his characteristically controlling questions. Instructional note: A question is defined as any teacher utterance which is intended to elicit (1) an active verbal response from a student (this criterion eliminates the rhetorical question) and (2) a cognitive response,

. . . . .

as contrasted with a physical response. Although a question may be declarative or imperative in form, the interrogative occurs most frequently. A multiple question is counted as one question, not as the total number of questions in the cluster.

Likewise, depending upon each teacher's individual needs as determined by analysis of tapes and lesson plans, the instructor and teacher work through the following activities that parallel this Segment's group classwork procedures:

1. They identify patterns of such controlling questions as the "yes-no" and/or cue questions and then plan a strategy for substituting a more open-ended question for the controlling question.
2. They identify characteristic reactions such as those which (a) do not encourage continued student participation because of their indifferent or negative tone; (b) do not provide the student with any evaluative information about the quality of his response; (c) simply repeat exact student answers or reword the answers slightly; and (d) indiscriminately accept inaccurate or wrong answers. Then they develop a repertoire of more encouraging and qualifying reactions which the teacher can substitute for his weak reactions.
3. They develop a simple system for tallying the instances of student/student interaction which occur in a segment of discussion. Next, they use this system to determine the number of instances of student/student interaction within the first fifteen or twenty minutes of the initial tape and/or a more recent tape. If they discover few instances, the teacher

should be able to hypothesize both reasons for the lack of interaction and techniques for increasing it, particularly if he has already observed the film and identified the techniques which the Master-teacher used to encourage interaction (see Procedures for Group Classwork, 10 and 11).

Evaluation

To measure each teacher's ability to increase the amount of student talk in his classroom discussions, the instructor compares the amount of student talk on the teacher's initial tape with the amount of student talk on a recent tape secured near the end of this Segment, such as the required tape described in Procedure 11. Ideally, the instructor examines more than the one taped teaching performance which might not be representative; other sources of data might include (1) the instructor's first-hand observations during which he tabulates the amount of student talk and (2) additional tapes which either he or the teacher makes.

If the teacher has not succeeded in increasing the amount of student talk, the instructor will find it helpful to determine the degree of progress which the teacher has made toward each of the secondary objectives; and to measure the teacher's growth toward each secondary objective, the instructor again uses the initial tape and at least one source of data obtained during this Segment to make comparisons. Because progress toward one of the skills described in the secondary objectives may be prerequisite to the teacher's attainment of the controlling objective, the instructor needs to identify this particular secondary objective and to devise more practice opportunities of that skill for the teacher. To illustrate, if the teacher has succeeded in (1) decreasing the amount of teacher talk, (2) decreasing the total number of teacher questions,

(3) decreasing the number of controlling questions, and (4) increasing feedback of a qualifying nature, but failed in increasing student/student interaction, it may be for this particular teacher with his particular students that increasing student/student interaction is the key to increasing student talk. For until the teacher finds a way to get students to interact with one another frequently, his other changes result primarily in more classroom silence rather than in more student talk.

Reading for Segment Three: Excerpt from "Levels of Teaching and Testing"

> Teaching, in the sense that I use it here, is allied to testing. When a class has read a book, the teacher must find out how well they have read it, and also must lead them into seeing it in new ways that might not have occurred to them before. Consequently, a teacher must prepare questions, some for discussion, some to be written on, which will provoke the necessary understandings. It is in this context that I ally teaching and testing.
>
> A good class discussion should lead to some valid generalizations about the work being studied; everyone in the room should understand what generalizations have been made, and these should have been proved by some specific references to the work at hand.
>
> In thinking along these lines, we should be constantly aware of the "level" on which we are asking questions. By "level" I mean the level of abstraction of the question we put. A factual question may be very concrete and admit of only one answer. A more abstract question leaves more up to the student; he has to do more thinking and searching to answer it. When I speak of "lower level," I mean more concrete; by "higher level," more abstract. I use the terms high and low because one of the qualities of intelligence is the ability to think abstractly. When we say that a question is too difficult, we often mean it is too abstract. When a question is not challenging to a bright student, it is often too concrete; it requires too little thought.
>
> In attempting to work out these various levels of questioning, or "testing," which are an important aspect of class discussion, I have been able to determine five levels: that which demands the ability (1) to remember a fact, (2) to prove a generalization that someone else has made, (3) to make one's own generalization, (4) to generalize from the book to its application in life, and, finally, (5) to carry over the generalization into one's own behavior.
>
> All levels have a legitimate place in both teaching and testing, but we should try to adapt them to their best use. When a class

has read a book, it is the teacher's problem to determine how well they have read it. The probing should go far beyond questions of fact.[1]

Segment Four: Approximately Four Class Meetings

Controlling Objective

Teachers will increase the number of high-level questions they ask in their secondary classroom discussions and will improve the clarity and precision of question sequences they employ.

Secondary Objectives

A. Teachers will distinguish between fact-recall questions and high-level questions first in written form and then in oral form.

B. Teachers will determine that the teacher's discriminating use of the fact-recall question and the high-level question controls both the quantity and quality of student thinking.

C. Teachers will learn to formulate questions which are clear, precise, and effective in stimulating desired answers from students.

D. Teachers will learn to sequence their questions so that the total thinking process requested of students is clear and logical.

Procedures for Group Classwork

1. The instructor informs the teachers that questions and the thinking processes which these questions elicit have been categorized by teachers and researchers in many different ways; the categorization which Gordon described in their reading assignment is just one example.

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[1] Edward J. Gordon, "Levels of Teaching and Testing," Teaching English in Today's High Schools, ed. Dwight L. Burton and John S. Simmons (New York: Holt, Rinehart and Winston, Inc., 1965), pp. 128-29.

He also informs the teachers that they will examine several categorization systems in class and that for their own teaching they may wish to adapt from these systems one which proves helpful for them. At first, though, they will be introduced to a simple system which helps to categorize questions into two major types, fact-recall and high-level. They will do so first with written questions and then later with oral questions.

2. The instructor distributes and discusses the following criteria for distinguishing between a fact-recall question and a high-level question.

Criteria for Categorizing Questions

Question: Fact-Recall. The single cognitive process of the fact-recall thinking question is the recall of facts. This question may be identified by one or both of the following criteria:

A. Factual information is requested, but no further use of this information is asked for at this time.

B. This factual information is usually from the recent reading and/or recent class discussion on the particular content assigned. However, the question may also request factual information outside the immediate readings.

Question: High-Level. The primary cognitive process of the high-level thinking question is the manipulation of facts. This question may be identified by one or both of the following criteria:

A. One or more of the following thought processes is requested in formulating an answer: translating, defining, explaining, inferring, generalizing, analyzing, synthesizing, applying, distinguishing, evaluating, etc.

B. Although facts from recently-read material are the raw material, other relevant facts or groups of facts may be called into use by the question.

Assignment: To provide teachers with illustrations of the high-level thought processes he has just enumerated (translating, defining, etc.), the instructor makes this assignment.

Read the following three selections and search for specific examples of the variety of high-level thought processes listed on the sheet of criteria for categorizing questions.

A. An abridgment of the article "The Analysis of Verbal Interaction in the Classroom" by Mary Jane McCue Aschner. The article can be found in its entirety in the paperback titled Theory and Research in Teaching, edited by Arno A. Bellack. (The abridgment is included at the end of this segment.)

B. An abridgment of the paper "Making Changes in How Teachers Teach" by Daniel A. Lindley, Jr., who provides excellent examples from Julius Caesar of the question categories described in the Aschner article. (The abridgment is included at the end of this segment.)

C. Classroom Questions by Norris M. Sanders. He defines and illustrates the following six high-level question types: translation, interpretation, application, analysis, synthesis, and evaluation. Classroom Questions is published in paperback.

3. Individually, teachers practice on paper distinguishing between the two levels, fact-recall and high-level, by categorizing written questions like the following samples about the poem "Richard Cory":

1. What did Richard Cory do "one calm summer night"?
2. What is the question which this act poses to the reader?
3. What words or phrases does the poet use to describe Cory?
4. What definitions can you give for these words?
   a. "clean-favored";
   b. "imperially slim";
   c. "quietly arrayed."
5. Who is telling the story of Richard Cory?
6. Why is the tale being told by "we," rather than "I"?
7. What attitudes or feelings do the people have toward Richard Cory?
8. What conclusions can you reach about the values of the townspeople?
9. What was the motivation for their existence?
10. Can you now suggest a reason for Richard Cory's suicide?
11. Define mood within the context of a poem.
12. What is the mood of this poem?
13. What techniques does the poet use to create this calm, stately mood?

As a group, teachers then compare their categorizations and resolve disagreements by checking particular questions against the criteria.

4. After writing on the board two questions like the following ones from "Richard Cory," the instructor asks the teachers to (a) answer each question and (b) label it as fact-recall or high-level:

   A. Describe Richard Cory's appearance. What kind of man was he? Was he ordinary or extraordinary?

   B. Now what about Richard Cory's suicide?

   To the first question, most teachers will probably answer something like "He was kingly, almost god-like in appearance--quite extraordinary--at least from what the people could see," a synthesized response to all three questions. The instructor asks if a student might not be giving an acceptable answer if he simply responds "extraordinary," an answer which may represent just a guess that is not the result of the high-level thinking which the teacher intended. As a group, the teachers hypothesize the disadvantages of the multiple question, noting particularly the confusion it causes students in deciding which question of the cluster to answer and, therefore, what thinking process to use. To the second question, most teachers will probably answer "It was Cory's way of rebelling against the material values which the townspeople held," a high-level response. The instructor asks if a student might not be giving an acceptable answer if he simply responds "It happened on a quiet summer evening," an answer representing only fact-recall thinking. Again as a group, the teachers hypothesize the disadvantages of the "what about" question, noting particularly the undesirable freedom it gives a student to answer at the fact-recall level when the teacher intended that he answer at a higher level.

5. To test further their skill in distinguishing between the two question categories, as an in-class exercise teachers compose eight questions, some fact-recall and some high-level. The questions should not be

labeled or ordered according to level. Teachers then exchange their lists of questions and categorize each question. They confer in pairs to identify classification problems and to resolve differences. Instructional note: Because the teachers have just finished reading it, the Gordon article is suggested as an effective content source for their eight questions.

6. If teachers were able to recognize and then compose written fact-recall and high-level questions and were able to avoid "what about" and multiple questions, they are ready to distinguish between these levels in an oral discussion. They listen to a 10-minute segment of one of their initial discussions which the instructor has selected for its variety of fact-recall and high-level questions. They categorize all teacher questions as either fact-recall or high-level, compare categorizations, and resolve differences. If the tape includes any "what about" or multiple questions, the instructor can use the occasion to illustrate their ineffectiveness. Instructional note: The instructor indicates each question to be categorized by stopping the tape after each one to allow the teachers time to indicate fact-recall (F-R) or high-level (H-L) on their paper.

7. Teachers now examine the student responses stimulated by fact-recall and high-level questions. They examine either the "Richard Cory" sequence or the eight questions composed in Procedure 5 and they hypothesize student answers to each question. The instructor leads a discussion which encourages their observations of content and structural differences between the answers to those questions which were designated as fact-recall questions and those designated as high-level questions. And here the instructor points out the similarities

between the characteristics of the responses to controlling questions (see Segment Three, Procedure 5) and fact-recall questions and between the characteristics of the responses to open-ended questions and high-level questions. Sample instructor questions and anticipated teacher responses are indicated below as a guide for the discussion:

A. Describe the differences in form between the responses to fact-recall questions and high-level questions.

Anticipated responses:

1. The responses to the F-R questions are much shorter, often just a few words in length. In contrast, the responses to the H-L questions are much longer.
2. The responses to the F-R questions are usually fragments, not developed sentences. In contrast, the responses to the H-L questions are usually fully-developed sentences.
3. The responses to the F-R questions are usually nouns. In contrast, the responses to the H-L questions are complete phrases or sentences.

B. What differences do you detect in the kind of thinking demonstrated in the responses?

Anticipated responses:

1. The responses to the F-R questions require the recall of a memorized or "recalled" item of information. In contrast, the responses to the H-L questions require a manipulation of factual knowledge.
2. The responses to the F-R questions require a single thinking process. In contrast, the responses to the H-L questions require a series of thinking steps often not indicated by the question itself.

C. What are the differences in the method of verification which would be used in testing the accuracy of the answer?

Anticipated response:

The accuracy of the answer to a F-R question can be verified by rereading the material from which the question was taken. In contrast, the answer to a H-L question may not be verifiable or perhaps only through an analysis of its logical thought progression.

D. What variables would you consider in determining whether to ask a fact-recall question or a high-level question?

Anticipated responses:

1. If the teacher is trying to achieve a better balance of participation among students, he might ask the more verbal students fact-recall questions which usually produce a short answer and the less verbal students high-level questions which usually produce a longer answer.

2. If the teacher is trying to encourage and reward a slower student, he asks him the lower-risk fact-recall questions until he seems confident enough to attempt higher-level questions.

Assignment: In preparation for the next sessions, those which focus particularly on clarity of question-phrasing and logic of question-sequencing, the instructor makes this assignment:

A. Read Chapter One of A Tale of Two Cities (short enough to be mimeographed easily if texts are not available);

B. Write a minimum of twelve study guide questions for tenth grade average-ability students who have had no previous introduction to the novel;

C. Include both fact-recall and high-level questions, but do not label them; vary the high-level questions by experimenting with the various classifications suggested by Gordon, Aschner-Lindley, and Sanders;

D. Order the questions in some deliberate sequence.

8. In class, teachers exchange their study guides and look primarily at the clarity of phrasing of the questions. They label each question as fact-recall or high-level, and then attempt to answer each question on paper. As he does so, the answerer evaluates the clarity of each question from his point of view as a respondent and makes marginal suggestions for revision of those questions which he judges to be unclear. After conversing in pairs about those marginal comments, the original question-writer rewrites those questions judged unclear by the answerer and then asks another teacher to attempt written

responses to the revised questions. Again, the question-writer and respondent discuss the clarity of the revised questions.

9. Referring to the understanding difficulties which they had in answering each others' Tale questions, teachers compose a list of steps to follow in formulating questions that students will find clear. Always the instructor brings teachers back to this criterion: in formulating this question, have you anticipated the problems a student will have in understanding and answering this question? Teachers may identify such steps as the following:

   A. Determine the gain for the student in answering the question;
   B. Determine how it will help him to reach the learning objective for the sequence of questions of which this one is a part;
   C. State any assumptions about the student's factual or intellectual background which the question contains;
   D. Determine a form which is consistent with the content and process learnings the student is to achieve; and
   E. State the specific thinking process which the student will be engaging in while answering the question.

10. Working in pairs again with the teacher-designed Tale study guides, teachers now examine the apparent rationale for each teacher's sequence of questions. Hopefully, teachers will pose questions like these to each other:

    A. Why have you followed a chronological order?

    B. Why are all the fact-recall questions first and all the high-level questions last? Or why are the two types of questions mixed?

    C. What balance between fact-recall and high-level questions is desirable for a study guide? Why?

    D. What use will be made of the study guide during class discussion of the chapter? Which of the questions might be appropriate for a quiz? Why? Which ones might be pivotal discussion questions? Why?

11. Teachers then compose a list of criteria to use in writing effective question sequences for students. Listed below are possible criteria which may be established:

Criteria for Study Guide Questions

1. Study guide questions should encourage the student to engage in an appropriate balance* of the following mental activities:

   a. clarifying his understanding of important factual material as he reads;
   b. building from these facts to valid concepts; and
   c. thinking divergently.

   *An appropriate balance takes into account the familiarity and difficulty of the reading material plus the reading ability of the students. If the material is both new and difficult and if the students are average or below in reading ability, then the balance might tend toward more factual questions which will give the readers confidence and necessary background for the more high-level thinking planned in later guides and discussions.

2. Study guide questions should be the same, in some cases, or closely related to class discussion questions and quiz-test questions so that students see the guide questions as helpful to their classroom performance.

3. Study guide questions should follow a sequence based on a rationale such as the following ones:

   a. a chronological order which will clarify important factual material; and
   b. an order from fact-recall to high-level questions which will develop thinking habits more logically from simple to complex.

Procedures for Individualized Instruction

1. With the instructor the teacher listens to his initial tape (or a more recent one) and identifies those questions which are complex, ambiguous, and/or generally confusing to the students. They also examine questions that the teacher has included in lesson plans to secure further evidence of the teacher's tendency to use certain question forms frequently. Two common patterns which may be appearing are the multiple question and the "what about" question. In helping the teacher to delete confusing question patterns, the instructor may take the following steps (the "what about" question is used to illustrate):

A. Examine the student responses which follow the "what about" question, for example, to see if the student gave an answer similar to the one the teacher has told the instructor he expected or an answer (or silence) which forced the teacher to restructure the original question;

B. Ask the teacher to rewrite all "what about" questions which appear on his lesson plans for the next three days; and

C. Ask him to tape a classroom discussion, count the number of "what about" questions, and then compare with the number he asked on the initial tape in a comparable time segment.

2. Each teacher writes and distributes to his students a study guide based upon a poem which he assigns for reading. The following day he leads a 15-minute discussion based on a series of carefully-constructed questions. The teacher tapes his discussion. The instructor and teacher then examine both sets of questions for the following characteristics:

   A. appropriate balance of fact-recall and high-level questions based upon student abilities, the lesson's objectives, and content validity;
   B. clarity of questions with a decrease, particularly, in the number of "what about" and multiple questions;
   C. the extent to which the study guide questions prepare students for the discussion questions; and
   D. a logical sequence which is intended to take students from the simple to the more complex thinking tasks.

3. The teacher experiments both on paper and in discussions with one of the following models for classifying questions: Gordon, Aschner-Lindley, or Sanders.

Evaluation

To measure each teacher's ability to increase the number of high-level questions he asks in his classroom discussion, the first part of the controlling objective, the instructor compares the number of high-level questions on the teacher's initial tape with the number of high-level questions on a recent tape secured near the end of this Segment. The tape of the 15-minute discussion described as Procedure 2 of the Individualized Instruction could provide this post-test data. If the teacher has not succeeded in increasing the number of high-level questions, the instructor will find it helpful to determine the degree of progress which the teacher has made toward the first two secondary objectives. To illustrate, if the teacher has difficulty distinguishing between fact-recall and high-level questions (Secondary Objective A), he cannot be expected to increase, except by chance, the number of high-level questions he asks in class discussions. Likewise, if he does not understand the relationship between the kind of question and the quantity and quality of student thinking (Secondary Objective B), he will have no reason to increase the number of high-level questions he asks in discussion. Therefore, the instructor first examines these sources of data to determine the teacher's ability to distinguish between the two levels of questions: (1) the teacher's categorizations of the "Richard Cory" questions, (2) his formulation and categorizations of questions on the Gordon article and the Tale study guides, and finally (3) his categorizations of questions directly from tapes and live classes. Second, the instructor determines the teacher's apparent understanding of the control which each question type has upon the quantity and quality of student thinking by examining (1) the teacher's contributions in the discussion contrasting student responses to fact-recall and to high-level questions and (2) the reasons he cites during Instructional Program classes and individual conferences for asking one question type rather than the other.

To measure each teacher's ability to improve the clarity and precision of his question sequences, the second part of the controlling objective, the instructor determines the degree of progress which the teacher has made toward the third and fourth secondary objectives. First, the instructor examines the following data for evidence that the teacher can formulate individual questions that are clear, precise, and effective in stimulating desired answers from students: (1) the teacher's identification of reasons for avoiding the "what about" and the multiple questions; (2) his identifications of these two question patterns in his own lesson plans and his ability to reduce the frequency of their appearance; (3) his analysis of classmates' Tale study guide questions for clarity of form; and (4) his in-class contributions to the steps for writing clear and precise questions. If these data suggest that the teacher is able to recognize and formulate individual questions that are clear, the instructor then determines the teacher's ability to sequence his questions so that the total thinking process requested of students is clear and logical. To judge this ability, the instructor examines the following data: (1) the teacher's identification of Tale study guide questions that do not follow a logical sequence and his ability to suggest a more appropriate sequence for those same questions; (2) his contributions to the writing of criteria for effective study guide questions; and (3) his ability to write a logical sequence of questions for his class to use as a study guide and for him to employ in his next sequence of classroom discussion questions.

First Reading for Segment Four: Abridgment of "The Analysis of Verbal Interaction in the Classroom"

Many teachers whose style is that of the lecturer teach in this way not out of preference, but perforce: they know no other way of handling the task. It is not always the case that these teachers take lecturing as the "easy way out." It is rather that they lack the skills and training necessary to stimulate active and thought-challenging discussion, and to sustain and direct its course into fruitful channels. To lead thinking without dominating it, to arouse students to a zestful pursuit of learning, is what some call the art of teaching.

Four of the five primary categories of our System represent our use of Guilford's theory of thinking operations. These are Cognitive-Memory, Convergent Thinking, Divergent Thinking, and Evaluative Thinking.

As Cognitive-Memory performances are defined, they involve no particular manipulation of ideas. We take them to represent only such thought processes as recognition, rote memory, and selective recall. Facts, ideas, and other remembered materials are reproduced, not produced in this primary category. We have broken Cognitive-Memory down into four secondary categories...Recapitulation, for example, involves such familiar classroom activities as quoting, repetition, recounting, and review.

In Convergent Thinking, we classify verbal behaviors taken to reflect thought processes that are both analytic and integrative, and that operate within a closely structured framework. Nevertheless, they are productive thought processes. Answers to questions and solutions to problems in the Convergent categories are reached by reasoning based on given and/or remembered data. Something more is involved than mere retrieval of remembered material; something is produced, though clearly not "invented" in any creative sense. We take this to be so whether or not the speaker, in dealing with a problem, gives explicit verbal evidence that he is using some rule, formula, or generalization. The archetype of Convergent Thinking is represented by the kind of reasoning that goes into the construction and "solution" of syllogisms, into our dealings with relationships in plane geometry, or in solving arithmetical problems. An oversimplified but apt example would be seen in such a question as: "If I had six apples and gave John two, how many apples would I have left?" The reply, "Four," would be classified as logical conclusion in our System.

Evaluative Thinking includes three secondary categories. Each represents a type of framework within which value-based judgments are requested or expressed. In unstructured Evaluative Thinking, the speaker is not restricted in his choice of criteria or in the range of his response along the dimension of judgment. Calling for and giving ratings exemplify this category. Example: "What do you think of MacArthur as a general?" ...In structured judgment, the speaker is presented with a limited scope within which to make an estimate or to state a choice....Qualified judgments either side-step or expressly reject choices made or called for.

In Divergent Thinking, we have developed four categories: Elaboration, Divergent Association, Implications, and Synthesis. In these categories we have tried to "capture" features of verbal performance that are indicative of initiative, spontaneity, ideational fluency, originality and ingenuity, penetration and flexibility in problem solving, and the like.

Divergent Thinking seems to flourish or languish partly according to the conditions within which the individual operates, and partly as a function of the individual's own cognitive repertoire. We have arrived at a description of some of the conditions which invite or allow for divergent thinking: Problems and questions which invite divergent thinking provide for its operation within a definite framework, but one which is "data-poor" in such a way as to cast the person upon his own initiative and his own resources. There must be room and opportunity to generate many and varied ideas, associations, and conclusions. Example: "Suppose Spain had not been defeated when the Armada was destroyed in 1588. Suppose instead that Spain had conquered England. What would the world be like today if that had happened?"[1]

Second Reading for Segment Four: Excerpt from "Making Changes in How Teachers Teach"

Let us start by considering some questions which might be asked in an English class discussing Shakespeare's Julius Caesar. Suppose that the class has reached Act III, scene i, l. 160ff., the scene in which Antony gets Brutus' permission to "speak in Caesar's funeral." This permission is, of course, crucial to the events which follow, and considerable attention to what happens is certainly justified. Here is the sequence of questions which the teacher uses to lead the discussion:

1. Where has Antony come from as he approaches Brutus? (Answer: from his house; he left the scene of the assassination and then returned.)

2. Why might this be important for what will happen next? (Answer: Antony has had time to think, alone, about what he might do.)

3. We know what Antony does do. What are some other ways in which he might have accomplished his goals? (Answer: Kill Brutus. Organize a counter-conspiracy. Get the army on his side.)

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[1] Mary Jane McCue Aschner, "The Analysis of Verbal Interaction in the Classroom," Theory and Research in Teaching, ed. Arno A. Bellack (New York: Bureau of Publications, Columbia University, 1963), pp. 55-64.

4. Antony says, after the conspirators have left him:

> Woe to the hand that shed this costly blood!
> Over these wounds now do I prophesy...
> A curse shall light upon the limbs of men;
> Domestic fury and fierce civil strife
> Shall cumber all the parts of Italy;
> Blood and destruction shall be so in use
> And dreadful objects so familiar
> That mothers shall but smile when they behold
> Their infants quartered with the hands of war...

Is it right for Antony to start the very fury and strife which he seems to know will follow his speech to the "mob"?

The problem now is to go back over each question and analyze the kind of thinking involved for the student. In the first question, what must the student know? He must at least have *read the play*. Not only this, but he must have read with some care. In III, i, l. 104, we have this insignificant interchange: "Cassius: Where is Antony?; Trebonius: Fled to his house amazed." Not much of a conversation, but there it is, and it is the answer to the question. Of course the student may not *remember* this; he may, when he hears the question, thumb back over his text and find it. In either event, however, familiarity with the text is the sole requirement for answering the question. It matters little how that familiarity was gained. This is, in other words, a *memory* task, and the mental activity involved is an operation called *cognitive memory* (adapted from Guilford).

The second question begins with the word *why*. This alone is usually sufficient evidence for the assertion that more than memory will be involved as the student gets down to work on the question. In the first place, the student must begin to put some elements together in his head before he can even speak. He must consider the answer which has been given to the previous question. Then he must consider what will in fact happen in the rest of the play. So far these are cognitive memory activities. But, having put these two pieces of his knowledge side by side in his head, so to speak, he must then *make a connection* between these two sets of data. It is this making of connections which is forced on the student by the word *why*. The student must fill in a missing piece; he must imagine Antony leaving and coming back, and he must infer that Antony has been using this time to sort things out and decide on a course of action. The more the student knows of Antony, the more logical this inference becomes; that is, the more the student sees Antony as a carefully calculating politician, the more he will infer careful calculation. In any case, all this inferring must take place within the framework supplied by the play. This is important. Guilford calls this kind of thinking *convergent*. To quote Guilford:

> The second large group of thinking factors has to do with the production of some end result. After one has comprehended the situation, or the significant aspects of it at the moment,

> usually something needs to be done to it or about it....In convergent thinking, there is usually one conclusion or answer that is regarded as unique, and thinking is channeled or controlled in the direction of that answer....

It is particularly important to note that the channeling or controlling of the thinking is being done by the structure of the play under discussion. The thinking must "converge" on the play. If the student gratuitously leaves the play for some easier or more attractive area, then the teacher may quite rightly chastize him for not answering the question. For example, if the student begins his answer by saying, "Well, if *I* were Antony...," the teacher is surely within her rights to interruupt and point out that the question is about the play, not about the student.

The third question involves still another, and extremely important, kind of thinking. The key part of the question is "some other ways"--ways, in other words, that the student must *make up* or *imagine*. These ways will have some relationship to the play, of course, but the best answers will reflect much more about the students who provide them than about the play. For example, Antony might have killed Brutus then and there. Or he might have attempted to work for political power through the Senate. Or--as a student once suggested to me--he might have gotten so scared at the idea of running the country that he might have travelled north to join the Gauls. Guilford calls this sort of thinking *divergent*. It is thinking that does diverge from the subject at hand, but this is not to say that it therefore has no value. The suggestion of alternatives for the play helps to make clear why the play is in fact put together the way it is. But far more important is the idea that divergent thinking *involves the student with himself*. His inventions are being solicited and, ideally, rewarded by the teacher.

The problems of what the teacher rewards, and how much reward she hands out, in class, are better handled by the Flanders system. But in connection with divergent thinking, it is important to find out what the teacher intends to reward as an answer to a divergent question. Theoretically, I suppose, if the teacher knows she has asked such a question she should accept and praise any answer, however bizarre it may be--and she should be intolerant only of commonplace or obvious ideas. I suspect that whether a teacher actually will reward any answer is dependent on the amount of tolerance she has for different ideas. Once a teacher is made aware of the potential for student creativity in such questions, her tolerance of wild answers can, in my experience, be easily increased.

The final question asks for a moral judgment. We, as adults, are sophisticated enough to wonder what "right" means. "Right" according to Roman law or custom? "Right" for a Christian in our society? "Right" for a Machiavelli? In the case of an adolescent, I imagine that his answer is more likely to be based on some intuition about his own value system, along with an educated guess about what he thinks the teacher wants to hear. In any event, the problem is to make a moral judgment. This sort of thinking Guilford terms evaluative. Aesthetic judgments are also included here--thus the question, "Is this a good play?" will also produce evaluative thinking.

Thus we have four kinds of questions, and four kinds of thinking: memory, convergent, divergent, evaluative.[1]

Segment Five: Approximately Five Class Sessions

Controlling Objective

Teachers will gain more practice in the following skills: (1) planning lessons which are student-centered and which provide opportunities for student talk; (2) asking appropriate levels of questions and giving meaningful reactions to student responses; (3) evaluating their own teaching performance and the performance of other teachers; (4) establishing realistic future goals for themselves, with provision for measurement of progress toward these goals.

Procedures for Group Classwork

1. The instructor describes a Discussion Project to be carried out during the last three or four class sessions of the Instructional Program. Each teacher is asked to follow these procedures:
    A. Select a topic which argues for or against specific content and/or skills which should be taught in the high school English classroom;
    B. At the class meeting preceding his discussion, present to the instructor and a teacher-evaluator a written lesson plan for a 20-minute discussion based on the topic;
    C. At the next class, conduct the discussion; and
    D. After the presentation, write a self-evaluation of the

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[1] Daniel A. Lindley, Jr., "Making Changes in How Teachers Teach," a paper delivered to the Conference of Supervisors and Consultants, National Council of Teachers of English, November, 1965, pp. 6-10.

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effects of the particular questioning and reacting skills which he was attempting to demonstrate in the discussion.

After this general description of the assignment, teachers and instructors together make the following decisions:

A. What is the range of topics from which the discussions might be developed? Instructional note: Certainly the wider the range of curricular areas from which topics are selected, the better acquainted teachers can become with the breadth of the English curriculum. Therefore, the instructor should encourage lessons about the skills of listening, speaking, reading, and writing; within the areas of composition, literature, and language, including grammar, usage, and semantics; and about the development of skills in problem-solving and critical thinking. Topic questions might include:

> Why should high school students study Shakespeare?
> Should the research paper be taught in high school?
> What are the reasons for studying poetry in the high school when students usually have such a negative reaction to most poetry?
> What should students learn from grammar study?
> What writing skills are most important for students to practice?
> How can pupil listening skills be developed?
> Can basic reading skills be taught in the "regular" classroom? How?

B. What are the requirements of the lesson plan? Instructional note: As a minimum, the requirements should probably provide for both content and process objectives set for the participants, for the specific discussion questions to be asked, and for a means of evaluating learning.

C. On what bases will the teacher's Discussion Project be evaluated? Instructional note: Each teacher should establish evaluative criteria that will focus upon the skills he has been developing during the Instructional Program and his practice teaching. He might construct a simple evaluation instrument which can be administered to the participants following the discussion; from this data, he can gain objective feedback about his progress that can be incorporated into his self-evaluation. In addition to the teacher's self-evaluation, one member of the class and the instructor will provide evaluations based primarily on the criteria which the teacher presents to them.

After the teachers select their topics, they decide upon an order of presentation which will demonstrate relationships between topics. Perhaps two or three teachers can plan together initially to insure these relationships. The incidental learnings of cooperative planning could be very rewarding for the participants.

2. In addition to setting up the Discussion Projects, the instructor also makes the second long-range assignment. Although it is not due until the final class meeting the instructor explains it now so that teachers can begin their preparation.

    A. Each teacher will identify a research topic which he can investigate during his next teaching assignment and which will force him to examine closely student behaviors, teacher behaviors, and the relationship between the two. During the next few days, the instructor discusses with each teacher his tentative research topic in an effort to narrow the investigation and to relate it, if appropriate, to the teacher's Discussion Project.

B. During the last class session, each teacher will present a 5-minute oral report which describes his intended investigation and details the materials and teacher skills necessary for implementation.

3. Depending upon the number of teachers in the class, the length of each session, and the number of class sessions remaining, three to four Discussion Projects are presented per class session. Recommended maximums for the discussion and subsequent class evaluation are twenty and ten minutes respectively. Teacher-evaluators for each discussion should have been assigned at least one session before the discussion and should have studied carefully the teacher's lesson plan. In order to plan his questions and the direction of the evaluation more effectively the evaluator observes rather than participates in the discussion. During the 10-minute evaluation session, he secures from the participants both the particular feedback the presenter has requested plus additional reactions that he and the participants have toward the performance. From this evaluation the presenter gains valuable immediate feedback while the evaluator gains practice in asking productive questions, some of which he must plan spontaneously during the teaching performance itself.

4. At the final class session, each teacher presents a 5-minute oral description of his investigation plans and requests questions and suggestions. Included below are descriptions of appropriate projects that might be undertaken by Teachers A, B, or C:

> For instance, Teacher A may decide to investigate the uses of Interaction Analysis, in its Flanders form or in a revised form. Working independently from taped classes or, preferably, from videotapes, he will first secure a picture of direct-indirect influence for his classroom and will then develop rationales and strategies for changing the balance of influence. Instructional

note: The instructor's rationale for not introducing Interaction Analysis to teachers during the Instructional Program and, instead, suggesting it for use during a more lengthy teaching experience is that (a) the time to learn Interaction Analysis is not available in a six-week course which has other objectives; and (b) the emphasis in initial stages of learning and using Interaction Analysis must be on the techniques of observing and classifying behaviors and, therefore, little time is spent on the why behind the behaviors to be changed.

Because the emphasis in the Instructional Program has been upon the development of questioning skills within the context of a single class or lesson plan, Teacher B may decide to plan a curriculum in which he uses these skills to effect certain learning outcomes in students at one particular stage and other outcomes at another stage. For example, during the first weeks of his new school term, Teacher B may wish to break the inertia of pupil silence by structuring at least 75 per cent of his questions as divergent questions intended to elicit low-risk, conjectural responses from students. More specifically, he may wish to have his students recognize: (a) that their ideas will be accepted and usually praised, not criticized, by the teacher; (b) that they will be given frequent opportunity to express their ideas fully and that they will be expected to use that opportunity responsibly; and (3) that many teacher questions will require original thinking rather than factual recall. When he has successfully broken the initial inertia of pupil silence, Teacher B may wish to work during the next four weeks toward creating a balance between cognitive-memory questions and convergent questions which require the students to use factual knowledge in inductive ways to solve problems which have a "right" or "accurate" solution. This teaching emphasis lends itself particularly well to an intensive first reading of a novel. For a final four-week period, Teacher B may wish to shift his teaching emphasis to evaluative questions which elicit from students their opinions on problems and issues which have no "right" answers. By dealing with the evaluative question as the last of the four major questions, the teacher will have sequenced well his students' skill development, for he will have led them from creative exploration (divergent thinking) to focused thinking (convergent thinking requiring fact-recall thinking as a starting point) and finally to the combination of divergent and convergent thinking essential to worthwhile evaluation.

Finally, Teacher C may wish to develop his students' skills in question-asking and question-answering. If it is true that people learn to change their behaviors more quickly, more consistently, and more qualitatively if they have an active role in the evaluation of their progress, then he may wish to inform students of the kinds of thinking they are encouraged to do through specific kinds of questions. The students themselves can then practice distinguishing between the kinds of questions they are asked to answer, the kinds of thinking they are doing, and the kinds of questions they can formulate themselves. They may in effect establish many of the same objectives that Teacher C held for himself in the Instructional Program.

5. Teachers respond again to the Simulation Exercise. The instructor might wish to return the teacher's original responses to him and request that he make any changes he wishes, explaining the reasons for the changes. Or the instructor might prefer that the teacher respond without seeing his initial reactions and without, then, giving reasons for any changes.
6. The instructor requests the teachers to complete a short-answer evaluation of the Instructional Program activities. In order to give teachers time to weigh the relative value of the activities, the instructor requests that teachers mail him the evaluation within a week following the end of the course. A sample format with an illustrative item from each segment is included below.

Evaluation of Instructional Program Activities

One of our major concerns in these sessions has been to develop skills that will enable you to lead classroom discussions that encourage student involvement and high-level thinking. Please indicate which 6 of the following 18 activities were most helpful to you by writing most in the space provided at the left of the item. Indicate which 6 of the 18 activities were least helpful by writing least in the space provided at the left of the item.

________ Responding to the Simulation Exercise and discussing your comments with the instructor.

________ Participating in and then analyzing the pair of "Lottery" discussions.

________ Observing the film "A Way of Learning" and noting techniques which the teacher used to produce student/student interaction.

________ Analyzing your initial tape with the instructor for multiple and/or "what about" questions.

________ Planning, executing, and evaluating your Discussion Project.

Procedures for Individualized Instruction

1. During days two and three of the final week of the Instructional Program, the instructor collects the final tape of each teacher's

class discussion about a selected short story. The tape is not taken earlier in order to allow the teacher and students to demonstrate as many changes as possible; it is not taken later in order to avoid any unnatural teaching circumstances caused by the last two days of a school term.

2. The teacher and instructor develop a pupil evaluative questionnaire which students complete in class during the final week of summer school. By writing or adapting his own rather than searching for a standardized form, the teacher can focus on items which request very specific information about the skills he has been trying to develop. Two pupil questionnaires are included as samples. The first questionnaire, used in the Pilot Study, is composed of items selected and adapted from an unpublished evaluation instrument.[1]

Pupil Questionnaire One

Please express your real opinions about the classes you have had with this teacher this summer. Do not put your name on this paper. No-one will know which responses are yours.

Date ______________ Teacher ____________________

Grade _____ Boy ___ Girl ___

Each item below suggests an area of possible improvement in this class. State your opinion of how much improvement is desirable.

If you think much improvement is desirable, circle M at the left of the item.
If you think some improvement is desirable, circle S at the left of the item.
If you think no improvement is desirable, circle N at the left of the item.

If you want to explain your responses, write in the space after the items.

M S N 1. The teacher asks questions which are easy to understand.
M S N 2. The teacher asks questions which can usually be answered.

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[1] George Bradley Seager, Jr., "Development of a Diagnostic Instrument of Supervision" (unpublished Doctoral thesis, Harvard University, 1965).

M S N 3. The teacher asks questions which are interesting to think about and answer.
M S N 4. The teacher makes me feel that my answers in class discussions are good ones.
M S N 5. There is never any undue fooling around in this class during discussions.
M S N 6. I know which things are most important for me to learn from discussions.
M S N 7. I learn from the comments that other pupils make in discussions.
M S N 8. When I want to ask questions or make comments, I feel free to do so.
M S N 9. Time seems to go by quickly in this class.

The second pupil questionnaire was developed by the investigator following the Pilot Study. Instructional note: Section I seeks the student's reactions to the amount and quality of participation--his own, the teacher's and that of other students; Section II seeks the student's reactions to the number and quality of the questions asked and the reactions given by the teacher; and Section III seeks the student's reactions to the learning atmosphere in the classroom.

Pupil Questionnaire Two

Directions: Circle the letter of the statement which best characterizes your feelings about today's class.

I. A. I wanted to talk more than I had a chance to talk;
B. I had a chance to talk as much as I wanted to talk;
C. I was called on to talk more than I wanted to talk;
D. I did not want to talk, but I did not mind the teacher's calling on me;
E. I did not want to talk, and I resented the teacher's calling on me.

A. I wish the teacher would have talked more in this class;
B. I wish the teacher would have talked less in this class.

A. I wish the teacher would have had more students talking during this class;
B. I wish the teacher would have prevented certain students or one particular student from talking so much.

A. I felt that most of my expressed answers and ideas were good or right;
B. I felt that most of my expressed answers and ideas were acceptable, but not particularly good;
C. I felt that most of my expressed answers and ideas were poor or wrong.

A. The teacher seemed to think that most of my expressed answers and ideas were good or right;
B. The teacher seemed to think that most of my expressed answers and ideas were acceptable, but not particularly good;
C. The teacher seemed to think that most of my expressed answers and ideas were poor or wrong.

A. The teacher seemed to listen carefully to what every student had to say;
B. The teacher seemed to listen to what students had to say most of the time;
C. The teacher usually seemed more concerned with what he would say next than with what the students had to say.

II. A. The teacher asked too many questions for me to think about within this discussion;
B. The teacher asked about the right number of questions for me to think about within this time;
C. The teacher should have asked more questions for me to think about within this time.

A. The teacher asked mostly questions which were interesting and fun to think about within this time;
B. The teacher asked some questions which were interesting and fun to think about and some questions which were boring;
C. The teacher asked mostly questions that were boring.

A. I could almost always understand the teacher's questions, whether or not I knew the answers;
B. I sometimes could not understand how the teacher wanted the questions answered, and I did not feel I could ask him for further explanation;
C. I sometimes could not understand how the teacher wanted the questions answered, but I felt I could ask him for a clarification;
D. I hardly ever could understand how the teacher wanted the questions answered, but I felt I could ask him for a clarification;
E. I found most of the teacher's questions so easy that I did not see any sense in answering them.

A. I had questions to ask, and the teacher provided me the opportunity to ask them;
B. I had questions to ask, but there wasn't the opportunity to ask them;
C. I had no questions to ask;
D. Other students were given the opportunity to ask questions which were usually then discussed and/or answered;
E. Other students were given the opportunity to ask questions, but the teacher usually suggested discussing them at another time.

A. The teacher called on all students as if their contributions were important;
B. The teacher called on certain students more often and rewarded their answers more enthusiastically than others;
C. The teacher occasionally ignored certain students whose hands were raised.

Directions: Please rate in order of importance or frequency, with 1 being the most important or frequent and 4, for example, being the least important or frequent.

III. I learned the most in this class
____ from listening to what the teacher said;
____ from listening to what the students said;
____ from formulating my ideas and then expressing them aloud in discussion;
____ from formulating my ideas, but not expressing them aloud in class discussion.

I would probably learn more in this class if I
____ took more and better notes of what the teacher said;
____ took more and better notes of what the other students said;
____ formulated my ideas and then expressed them aloud in class discussions.

The differences of opinion on controversial issues raised in this class
____ remained unsettled;
____ were settled by the teacher's decision;
____ were settled by class consensus;
____ were settled by adoption of a student's decision;
____ none of the above descriptions is appropriate because there were no controversial issues raised in this class.

If the teacher had left the room, told us to continue with the discussion, and appointed a student to act as discussion leader, the class probably would have
____ continued to discuss as before;
____ continued to discuss, but in a less serious way;
____ stopped discussion and begun individual work;
____ stopped discussion and begun talking and fooling around.

3. The instructor holds a final evaluation conference with each teacher and focuses upon the following topics:

A. The teacher's self-evaluation of his progress toward the teaching skills which he has established for himself.

B. The teacher's identification of long-range goals he wishes to establish for his next teaching assignment and possible strategies for reaching them. Out of these goal statements the instructor and teacher may select and expand one into the research topic to be discussed in the final class session.

C. The instructor's report of data that would provide the teacher with further evidence in substantiating or negating his self-evaluation. The following data might be helpful:

(1) comparative figures from the initial and final tapes to identify changes in the two major objectives of increased student talk and an increased number of teacher high-level questions;

(2) pupil responses to evaluations they have been asked to do by the instructor;

(3) the instructor's reactions to the teacher's growth in Instructional Program activities.

D. The teacher's evaluation of the Instructional Program, particularly in reference to the way the various segments fit into a meaningful set of major objectives. Since the other teacher evaluations sought are rather tightly structured, open-ended questions might prove most productive here.

Evaluation

To measure teachers' achievement of the controlling objective of Segment Five, the instructor measures first the teacher's ability to plan lessons which are student-centered and which provide opportunities for student talk. He examines (1) the teacher's lesson plan for his Instructional Program Discussion Project and (2) his daily practice teaching lesson plans for evidence of the following indicators of planning for student involvement: objectives that state what students will learn; procedures that describe clearly what students will do; and activities like discussions, student reports, and student evaluation of their own and others' work that force students to interact actively with the content material and other learners.

Second, the instructor measures the teacher's developing of appropriate levels of questions and meaningful reactions to student responses by comparing data drawn from his initial tape (Segment Two, Individualized Instruction) with data drawn from current classroom observations and tapes as well as from his performance while presenting the Instructional Program Discussion Project. The instructor determines the degree to which each teacher has increased the number of high-level questions and the number of appropriate and qualifying reactions.

Third, the instructor measures the teacher's ability to evaluate his own teaching performance by examining (1) the teacher's written evaluation of his Instructional Program Discussion Project; (2) his self-evaluative comments in his final conference with the instructor; (3) his choice of research topic for evidence of its relationship to the teacher's developing needs and/or strengths; and (4) his contributions of items to a pupil questionnaire designed to give him evaluative feedback about his specific teaching strengths and weaknesses. The instructor measures the teacher's ability to evaluate a teaching performance in general by judging (1) the quality of his suggestions in the Instructional

Program discussion which established the criteria of evaluation for the Discussion Projects; (2) the specificity and accuracy of his evaluation of a fellow teacher's Discussion Project; and (3) the quality of his observations about the strengths and weaknesses of the Instructional Program as reported in his final conference with the instructor.

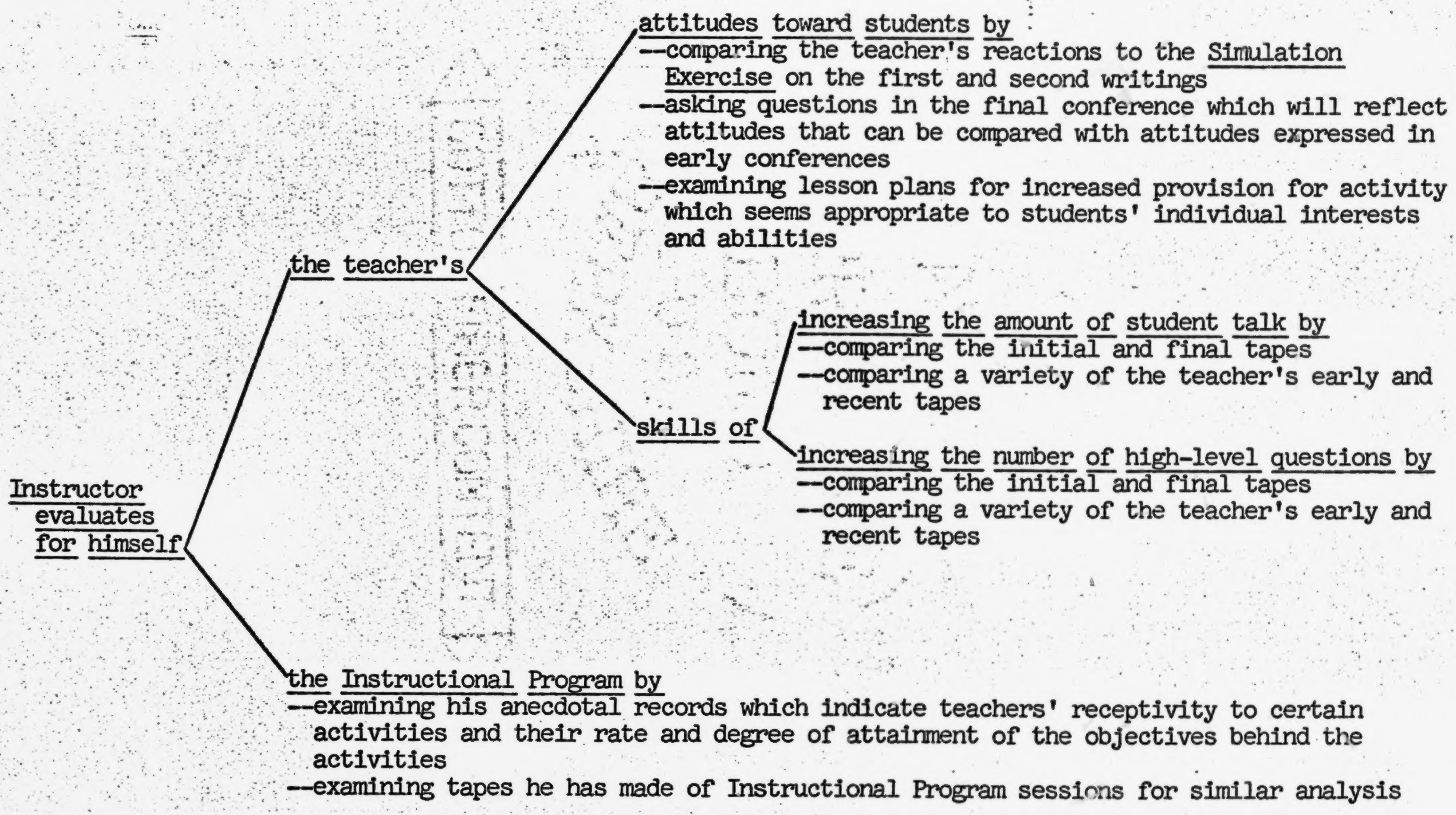
And, fourth, the instructor judges the teacher's ability to establish realistic goals for himself by evaluating (1) the appropriateness and feasibility of the research topic he selects and reports on; and (2) the value of the long-range goals he cites in his final evaluation conference with the instructor.

3. Final Evaluation of the Instructional Program

In addition to the on-going evaluation which he conducts during each segment, the instructor needs to conduct an evaluation at the completion of the course. He evaluates (1) the changes which teachers have made in both attitudes and skills during the six weeks and (2) the effectiveness of the Instructional Program in producing these changes in attitudes and skills. The reader is referred to the introductory section of learning principles and derived objectives for a summary of the objectives upon which this evaluation is based.

Within the realm of attitudinal changes, the instructor is concerned primarily with the dimension of student-centered attitudes, as detailed on pp. 116-17. Within the realm of behavioral changes, the instructor evaluates for two changes: (1) an increase in the amount of student talk in the teacher's classroom discussions and (2) an increase in the number of high-level questions which he asks in these discussions. Although the instructor is interested in both attitudinal and behavioral changes in such areas as teacher goal-setting, evaluation, and problem-solving, he is limited in the amount of thorough evaluation which he can do; therefore, he should concentrate upon those attitudes and skills enumerated above which influence most directly the increase of higher-level student thinking in the classroom. And, finally, in order to isolate the influences which produced these teacher changes, the instructor evaluates the Instructional Program itself. He searches for relationships between teacher changes and the specific procedures which caused these changes.

Basically, the instructor has two major sources of evaluative data: (1) the data and perceptions which he himself can obtain and (2) the data and perceptions which he obtains from other sources--the teachers, their students, and other university and summer school staff involved in training these teachers. The diagram which appears on the next page represents an ideal model in its presentation of many sources from which evaluation can be secured. Certainly time limitations and other responsibilities prevent the instructor from availing himself of all evaluative sources. But it seems essential that he secure the following evaluation: (1) his own evaluation of the teachers' changes in both attitudes and skills; (2) his own evaluation of the Instructional Program; (3) the teachers' evaluation of their changes in both attitudes and skills; and (4) the teachers' evaluation of the Instructional Program. The validity of the Instructional Program becomes questionable if these four evaluations are not made.



Instructor evaluates for himself

the teacher's

attitudes toward students by
--comparing the teacher's reactions to the Simulation Exercise on the first and second writings
--asking questions in the final conference which will reflect attitudes that can be compared with attitudes expressed in early conferences
--examining lesson plans for increased provision for activity which seems appropriate to students' individual interests and abilities

skills of

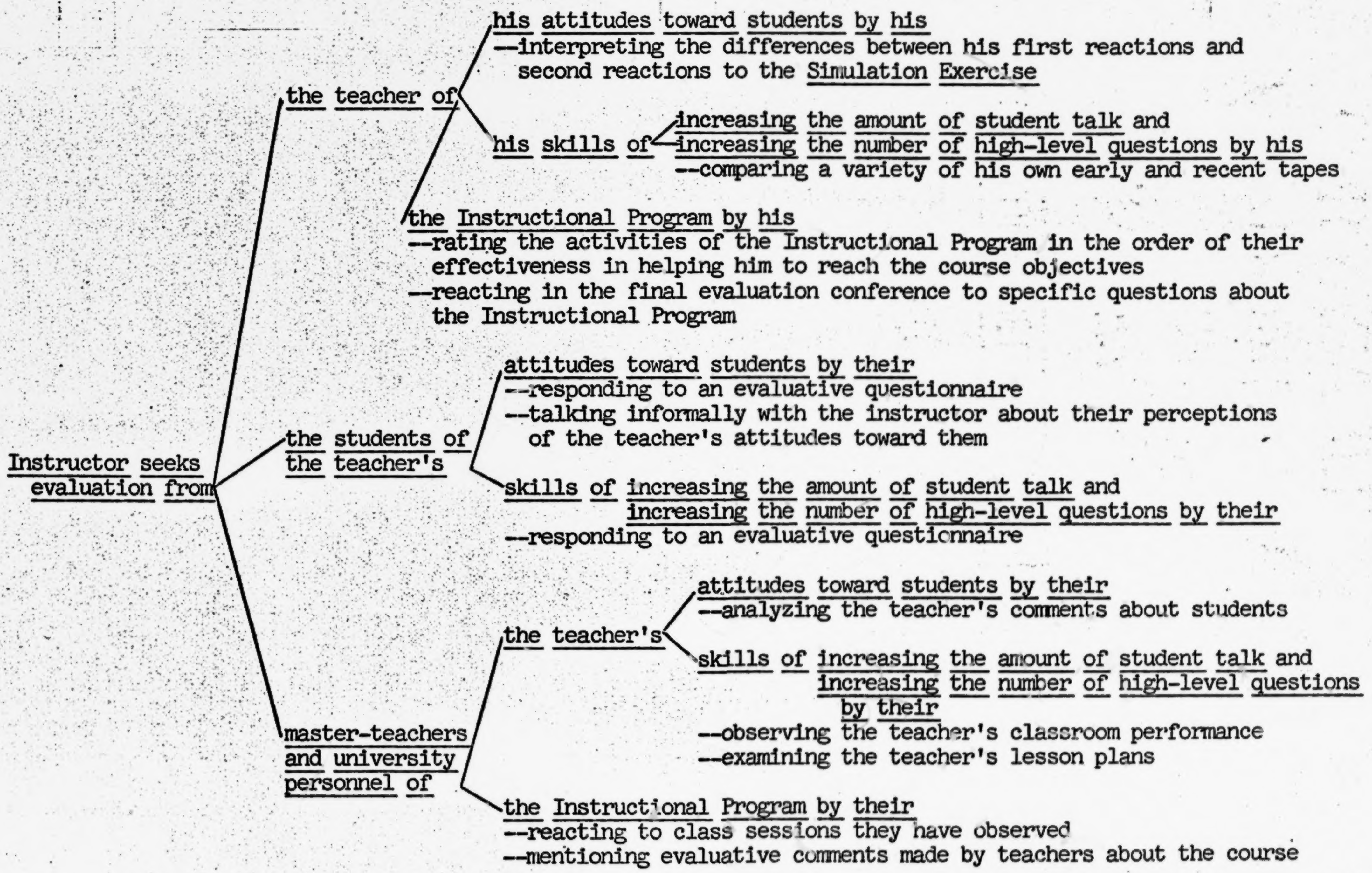
increasing the amount of student talk by
--comparing the initial and final tapes
--comparing a variety of the teacher's early and recent tapes

increasing the number of high-level questions by
--comparing the initial and final tapes
--comparing a variety of the teacher's early and recent tapes

the Instructional Program by
--examining his anecdotal records which indicate teachers' receptivity to certain activities and their rate and degree of attainment of the objectives behind the activities
--examining tapes he has made of Instructional Program sessions for similar analysis

DIAGRAM I

SOURCES OF FINAL EVALUATION OF THE INSTRUCTIONAL PROGRAM



- Instructor seeks evaluation from
  - the teacher of
    - his attitudes toward students by his
      - —interpreting the differences between his first reactions and second reactions to the Simulation Exercise
    - his skills of
      - increasing the amount of student talk and
      - increasing the number of high-level questions by his
        - —comparing a variety of his own early and recent tapes
    - the Instructional Program by his
      - —rating the activities of the Instructional Program in the order of their effectiveness in helping him to reach the course objectives
      - —reacting in the final evaluation conference to specific questions about the Instructional Program
  - the students of the teacher's
    - attitudes toward students by their
      - —responding to an evaluative questionnaire
      - —talking informally with the instructor about their perceptions of the teacher's attitudes toward them
    - skills of increasing the amount of student talk and increasing the number of high-level questions by their
      - —responding to an evaluative questionnaire
  - master-teachers and university personnel of
    - the teacher's
      - attitudes toward students by their
        - —analyzing the teacher's comments about students
      - skills of increasing the amount of student talk and increasing the number of high-level questions by their
        - —observing the teacher's classroom performance
        - —examining the teacher's lesson plans
    - the Instructional Program by their
      - —reacting to class sessions they have observed
      - —mentioning evaluative comments made by teachers about the course

Diagram I Continued

The following description illustrates one way in which an instructor can use this diagram to discover differences between his perceptions of the Instructional Program and his teachers' perceptions. Because the instructor can expect the greatest perception differences to appear in the areas of teacher attitudes toward students and attitudes toward the course itself, he will find it more necessary to secure evaluative data from several sources for these areas than for the area of skill changes.

For example, in determining the effectiveness of the Instructional Program in helping teachers achieve the course objectives, the instructor examines his anecdotal observation notes and lists those activities which he judges were most effective in encouraging an awareness in teachers of the students' desire to talk in class discussions, an indicator of teacher growth toward more student-centered attitudes. At the top of his list he places the procedure in which the instructor conducts a "discussion" and calls on certain teachers frequently and others infrequently. His reason for rating this procedure high is that the teachers were able to describe the differences in the treatment they received. However, in their rating of each course activity, the teachers give this procedure a very low rank. During the final conference, several teachers identify as their reason for not finding that activity valuable their inability to see its relevance to their own classroom situations. The instructor can probably conclude that he had assumed that the teachers were making connections between their feelings during the "discussion" and the feelings their students might have if placed in a similar situation. He learns from the teachers' comments that he had not forced them to make that connection and that Instructional Program revisions should provide for this connection. Thus, careful evaluation of the same procedure by different persons can reduce the perception differences which are common to evaluation procedures.

4. References for Instructional Program

The following readings are recommended to the instructor for his use both prior to and during the teaching of the Instructional Program. The majority of these readings might also be assigned to the teachers during the course or recommended for their reference after their completion of the course.

1. Aschner, Mary Jane McCue. "The Analysis of Verbal Interaction in the Classroom," Theory and Research in Teaching, ed. Arno A. Bellack. New York: Bureau of Publications, Columbia University, 1963.

   A very brief adaptation of this article appears in the Instructional Program at the end of Segment Four. Other articles in this collection which the instructor might find helpful background are: "The Evaluating Operation in the Classroom" by Milton Meux; "Utah Study of the Assessment of Teaching" by Marie Hughes; "Teacher Influence in the Classroom" by Ned A. Flanders; and "The Scientific Study of Teacher Behavior" by Donald M. Medley and Harold E. Mitzel.

2. Bellack, Arno A., et al. The Language of the Classroom. New York: Institute of Psychological Research, Teachers College, Columbia University, 1963.

   This descriptive study of verbal discourse in social studies classes serves for the instructor as a source of ideas for developing his own observation and analysis systems.

3. Bernstein, Abraham. Teaching English in High School. New York: Random House, 1961.

   Mr. Bernstein's discussion of the bi-polar question presents another question model with which teachers can experiment (pp. 345-51).

4. Bruner, Jerome S. A Study of Thinking. New York: John Wiley and Sons, 1956.

   This book is the product of laboratory research on the nature of concepts, concept acquisition, and strategies employed by learners. The categories of concept-types explained in the book are more useful for the instructor than for beginning teachers.

5. Burton, William H., Kimball, Roland B., and Wing, Richard L. Education for Effective Thinking. New York: Appleton-Century-Crofts, Inc., 1960.

   The authors' aim is "to give teachers an introduction to what it means to think and to some of the processes through which the thinking of students may be improved." This introduction is a simple and practical one, designed especially for teachers in training and in service.

6. Commission on English. *Freedom and Discipline in English.* New York: College Entrance Examination Board, 1965.

   If read critically, this report gives a provocative view of current trends and attitudes in English teaching. Pages 57-99 refer specifically to those fundamental questions which the teacher faces in preparing to study a literary text and its value.

7. Friedenberg, Edgar A. *The Vanishing Adolescent.* New York: Dell Publishing Co., 1959.

   Friedenberg defines the adolescent personality and the features of our society which work against our youth. He includes a sentence-completion instrument which can provide invaluable information about our students.

8. Gage, N. L. (ed.). *Handbook of Research on Teaching.* Chicago: Rand McNally and Company, 1963.

   This tome is valuable both as a study book and reference book. The research on variables in teaching is reviewed to date, and many myths connected with teaching are exploded by conflicting research. Methods of teaching are fully explored in one chapter. Another chapter considers teaching variables from the viewpoint of supervision. Chapters 16 and 18 review and summarize the research in the teaching of reading and the teaching of composition and literature respectively; teachers would find these chapters helpful in preparing their Discussion Projects and research topics.

9. Gordon, Edward J. "Levels of Teaching and Testing," *Teaching English in Today's High Schools*, ed. Dwight L. Burton and John S. Simmons. New York: Holt, Rinehart and Winston, Inc., 1965.

   A kernel section of Gordon's article appears in the Instructional Program at the end of Segment Three; teachers should read the entire article.

10. Grossier, Philip. *How To Use the Fine Art of Questioning.* Englewood Cliffs, New Jersey: Teachers Practical Press, Inc., 1964.

    The author describes and illustrates eight functions which questions can serve. This paperback is a simple manual to use in devising good questions and then handling questions skillfully in class discussion.

11. Jersild, Arthur T. *In Search of Self.* New York: Teachers College, Columbia University, 1952.

    Jersild believes that the teacher who wants to help his pupils understand themselves must learn how to understand himself. The implications are many for both the instructor and teachers of the Instructional Program.

12. Postman, Neil and Weingartner, Charles. Linguistics, A Revolution in Teaching. New York: Delacorte Press, 1966.

The authors describe how linguists of different interests conduct their inquiries and how these processes of inquiry into language can be translated into classroom activities. The beginning teacher can gain insight into important language problems which he and his students can attempt to solve and into the questions which will help them in their inquiry.

13. Raths, James and Leeper, Robert T. (eds.). The Supervisor: Agent for Change in Teaching. Washington, D. C.: Association for Supervision and Curriculum Development, NEA, 1966.

This collection of papers focuses on variables which the instructor should understand to effect teacher change. The instructor should find three papers particularly relevant to his teaching of the Instructional Program: "Helping Teachers Change" by James B. MacDonald; "Effects of Supervisor's Knowledge of Student Teacher Personality Evaluations" by Thomas A. Ringness; and "Interaction Analysis as a Feedback System in Teacher Preparation" by Edmund J. Amidon and Evan Powell.

14. Sanders, Norris M. Classroom Questions. New York: Harper Row, 1966.

The author, a secondary social studies teacher, believes that teachers can elicit a variety of thinking processes from students through careful use of questions. He describes a practical plan for teachers who want to insure an intellectual atmosphere in the classroom. Helpful are the many illustrations of the seven question categories based on Bloom's taxonomy of objectives.

15. Schwab, Joseph J. "Eros and Education: A Discussion of One Aspect of Discussion," Journal of General Education, Vol. 8, No. 1 (October 1954-1955), pp. 51-71.

This article, perhaps too difficult for beginning teachers, describes the interpersonal relationships which operate in a discussion. Also, the discussion itself is described in terms of three functions that every discussion should serve: an efficient means of arriving at an intended understanding of some specified object of knowledge; an instance of process; and a stimulus to the student to try the activity in question.

16. Taba, Hilda. "The Teaching of Thinking," Elementary English, XLII (May, 1965), pp. 534-542. Also included in Language and the Higher Thought Processes edited by Russell G. Stauffer.

This article describes a study of classroom interaction designed to examine the relationship between teaching strategies and the development of cognitive processes. The study's central hypothesis was that it is possible to train students in the processes of thinking, provided that the trainable cognitive skills could be identified. Taba first identified the three tasks of (1) concept formation, (2) interpretation of data, and (3) application of principles. Then she described the strategies for inducting students into these thinking skills.